CLINICAL MEDICINE

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Editorial

Dioscorides

The Father of Materia Medica

IT is difficult for us, today, to realize the handicaps under which our ancient brethren labored when they set out to treat disease, for while a multitude of remedies were available to them, there was no general consensus as to their powers and limitations, the contemporary information being based chiefly upon folk lore and hearsay evidence, which varied as widely as its heterogeneous sources.

The first serious attempt to present the subject of materia medica in a workable form was made in the first century A.D., by Pedacius (or Pedanius) Dioscorides, who wrote in bad Greek, arranged his material like a lexicon, and was so successful that his descriptions were followed, practically word by word, for sixteen centuries.

Dioscorides, the Greek, was probably born in Anazarba, Cilicia, during the early part of the first century, and received his early, formal education in Alexandria, but later, becoming an army surgeon in the service of the Emperor Nero (about 60 A.D.), he embarked upon the career of a peripatetic student, like Galen and Paracelsus, and traveled, not only in Greece, but also in Italy, Asia Minor and, perhaps southern France, collecting quantities of specimens of drugs of all kinds—mineral, vegetable and animal—listening to the stories of their reputed virtues told by the natives, testing them personally, and recording the testimony he heard and the results of his own observations. This was the vast mass of material upon which his famous treatise on materia medica, published about 77 A.D., was based.

But even though ninety or more of the medicaments described by the Greek army surgeon are in use today, some of his remedies would scarcely appeal in this fastidious age. For instance, he recommended a "distilled water," made from human excrement, for external application in the treatment of eye diseases, calculus, dropsy, and epilepsy, and internally for the bites of mad dogs; also a plaster made from spiders, to be applied to the forehead and temples for the cure of tertian malaria. He used powdered red coral in the treatment of hemoptysis and suggested wine of mandragora as a draught for insomnia or pain and also as an anesthetic, of a sort, before operations of cutting or burning.

The epoch-making treatise of Dioscorides went through many editions and translations and was carried into Arabia when the sun of Greek medicine was setting. The most important codex is a ninth-century manuscript in the National Library, Paris; and the best edition (in Latin and fully illustrated) is that of Mattioli, printed in Venice in 1554.

Some may be inclined to laugh at certain of the vagaries of this outstanding therapeutic botanist, but such laughter can come gracefully only from those whose works have brought knowledge and help to more than forty generations of physicians, the world over.

Sunburn

A naval officer recently took a week-end of relaxation at one of the popular lake resorts in this vicinity. As the sky was hazy most of the day, he apparently thought it was safe (since the sun was not shining brightly) to spend a number of hours on the water, dressed only in a pair of swimming trunks. The result was that he was so severely sunburned that he had to stay in bed for a week or more.

Most intelligent and literate people, today, realize the danger of too-liberal exposure to the rays of the summer sun, but some of them seem not to know that the actinic (burning) power of these rays is nearly doubled if they are on or close to the water; and still more appear to be ignorant of the fact that *sky-shine*, on a hazy day, has almost as strong an ultraviolet effect as direct sunshine. In our June, 1942, issue, on page 176, we published an abstract showing that people can be sunburned in the Artic regions.

One of the jobs of the family doctor is to keep his patients and friends warned of dangers to their health, and some instruction as to the disastrous effects of sunburn seem to be indicated, especially today, when people are becoming ultraviolet-conscious and apparently feel that, if a little is good, more will be better.

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Fact means something only when it confers the power to do something.—MANLY P. HALL.

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Synthetic Antimalarial Drugs

WITH the present shortage of quinine, the synthetic antimalarial drugs are assuming such great importance that the officials of the U. S. Pharmacopeia have anticipated its twelfth revision by the issuance of Interim Revision No. 6, which makes three such drugs official. These are: *Pamaquine Naphtholate* ("Plasmochin"), *Quinacrine Hydrochloride* ("Atabrine"), and *Totaquine*, a mixture of crude alkaloids from cinchona barks (those found in Mexico and South America seem to be satisfactory), developed by the health division of the League of Nations and used successfully in India and the Philippines. The official standards for these drugs are given in detail.

This same Revision is utilized to officialize several other products and publish their standard specifications. These are: Normal Citrated Human Plasma and Normal Serum; Sulfathiazole (powder and tablets); and complete standards for the preparation of solutions for injection, including the water for such solutions (with the *Pyrogen Test*) and the containers for them.

It is now more important than ever before that physicians should be familiar with the Pharmacopeia, as more shortages are apt to develop, and clinicians must know what drugs can safely be substituted for the ones that are no longer available.

At the recent meeting of the A. M. A., a pamphlet titled, "What's New in the U. S. P. XII," was distributed, listing 160 new drugs to be included in the forthcoming Revision. We suggest that our readers write to the chairman of the Committee of Revision, Mr. E. Fullerton Cook, 43rd St., and Woodland Ave., Philadelphia, Pa., for a copy of this pamphlet and for full information regarding any of the preparations mentioned in this editorial (or in the pamphlet, when they receive it), in which they are especially interested.

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The Seminar Again

In the January, 1941, issue of CLINICAL MEDICINE, page 3, we reminded you that the *Seminar*, is especially and essentially, *your* department of the magazine, and warned you that, if you like it and want to have it continued, *you* must send us the grist to keep that mill running. In an emergency we *can* dig up a problem somewhere (though we prefer to use those *you* send us), but we cannot write the discussions.

At the time of going to press with this issue, we have received only one discussion (a *good* one) of Problem No. 6, presented in our June issue on page 173, so there will be *no Seminar in this issue*.

If *you* want this long-popular feature to continue, send in, *promptly*, your discussion of Problem No. 6, and also of Problem No. 7, on page 211 of the July issue. If we receive a few more discussions of No. 6 within the next week or two, that Problem will appear in the September issue, and so on as long as you keep the ball rolling.

Stock Up Now!

The uncertainty in the minds of a good many physicians as to their being called for military service seems to be causing, not only those who are actually apt to be called rather soon, but also a good many others, to adopt a hand-to-mouth attitude in the procurement of drugs and other supplies that are essential for carrying on clinical practice successfully.

This specific uncertainty should not be allowed to overshadow the fact that there are other matters (more vital and certain ones, in many cases) that are equally uncertain, such as the question of the *prompt* renewal of supplies of such things as gauze, cotton, adhesive plaster, syringes, needles, rubber gloves or finger cots, instruments and apparatus, parenteral solutions in ampules, certain drugs that are regularly used in the office or at the bedside and many other articles of which every *physician should promptly make his own individual list.* This applies even to those men who regularly prescribe most of the medicine they order for their patients.

The supply of several of these highly important items has already been cut off entirely, and many more of them are hard to get or will be considerably delayed in delivery, so that, if the office supply is permitted to run low, it may be impossible to replenish it before it is actually exhausted. It will not be possible, indefinitely, to phone to the corner pharmacist for enough to tide one over.

Now is the time to take a careful inventory of the stock of *necessary* materials on hand, estimate the requirements of the next six months or so, and place orders, *immediately,* for the things that will actually be needed to keep your practice running smoothly, not only for tomorrow and next week, but for half a year hence.

There need be no hesitancy about this, because, if you are called to military service, *some* doctors will be left to care for the civilian population, and one of these, or your druggist, should be glad to relieve you of any surplus stocks, at little or no loss to you; *so stock up now!*

NEXT MONTH

Dr. Bela Balas, of Chicago, will describe (with illustrations) a new, ingenious, and effective method of treating cervicitis.

Drs. G. A. Rau and H. H. Kahlenberg, of Two Rivers, Wis, will present a new treatment for the common mycotic skin diseases.

COMING SOON

"Sulfathiazole Nasal Jelly in Colds," by R. S. McArthur, M. D., C. M., Los Angeles, Calif.

"Cotton Thread as Suture Material, with notes on Suturing and Skin Closure," by Joseph C. Urkov, M.D., Chicago, Ill.

AUGUST

A shrill song
Tears the silent heat—
A lone cicada calling.
All earth's forces work for the harvest.
At evening, dew is falling
Bright days, in retreat,
Grow less long.

G. B. L.

LEADING ARTICLES

Infusions Through the Bone Marrow

By L. M. TOCANTINS, M.D., *Philadelphia, Pa.*
Associate Professor of Medicine, Jefferson Medical College

When an infusion of blood, plasma, or other fluid is indicated, it is embarrassing to the physician and disastrous for the patient to discover that a vein cannot be entered with the needle. Dr. Tocantins offers a way out of this difficulty.

THE administration of fluids to infants is difficult, especially when rapid absorption is desired. The two main routes available, aside from the peripheral veins, are the superior longitudinal sinus, reached through the anterior fontanel, and the peritoneal cavity. Infusion through the anterior fontanel, unless in skilled hands, is dangerous. The absorption of substances injected intraperitoneally may, under certain circumstances, be greatly delayed. Moreover, in the treatment of abdominal disorders, it is not advisable to use this route. Thus there is left a group of infants for whom infusion by the intramedullary route may be the only advisable resort; and there are also occasional cases in adults, as in marked circulatory depression, where this method should be employed.

After demonstrating conclusively, by animal experiments, that blood and other fluids, when introduced into the medullary cavity of a bone, were readily taken into the circulation, my associates (Drs. J. F. O'Neill, H. W. Jones, and A. H. Price) and I worked out a more or less standardized technic for such infusions which, together with details of the preliminary experiments, has been reported elsewhere[1,2,3,4]. This article is intended to present the essential clinical points simply, so that this method may be adopted by general clinicians, in selected cases.

Equipment

In addition to the usual reservoir, tubing, clamps, needle adapter, and other items employed in an intravenous infusion, a *special aparatus** (see Fig. 1) is required for a bone-marrow infusion. This consists of two needles, an outer one of 15 gage (Fig. 1-C), an inner one

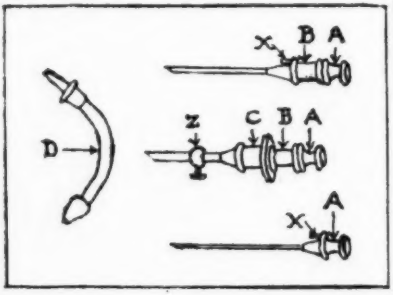

Fig. 1: Needles and Adapter. (A) Solid stylet; (B) inner needle; (C) outer needle; (D) metal adapter for syringe (forced) infusion; (X) lug for coaptation of needles; (Z) adjustable needle guard.

of 18 gage (B), and a solid stylet (A), with its tip beveled to fit the tips of the two needles accurately, as a trocar fits into its cannula. Studs (X) on the shank of the stylet and the inner needle fit into corresponding holes in the next larger segment of the apparatus, to insure proper adaptation. A movable guard (Z) is adjusted in the proper position, as soon as it is certain that the marrow cavity has been entered to prevent further penetration of the needle. It is advisable to have at hand needles of three lengths—2, 3.5, and 5 centimeters.

If citrated blood, plasma, or other solution is to be given rapidly, under pressure, as in traumatic shock and other forms of circulatory failure, an apparatus such as that shown in Fig. 2 will be needed, including the *adapter* (Figs. 1-D and 2-E) required when the patient is on his back and the fluid container is at approximately the same level, so that the conducting tube passes horizontally.

*This apparatus is manufactured by the George Pilling Company, Philadelphia.

Technic

The technic differs slightly, depending on the bone that is selected. In the sternum of adults, the site of election for the puncture is either the manubrium (Fig. 3), or the body of the sternum midway between the angle of Louis and the xiphoid process.

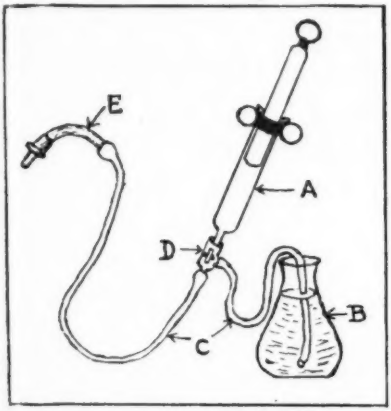

Fig. 2: Apparatus for forced infusion. (A) Syringe; (B) container for fluid to be infused; (C) rubber tubing; (D) two-way stopcock; (E) metal adapter.

After preliminary injection of the skin, subcutaneous tissue, and underlying periosteum, with procaine, the needle is inserted vertically, with the bevel up, and the periosteum is penetrated with a to and fro twisting motion until a good foothold is obtained. Then the needle is tilted until it makes an acute angle of about 30 degrees with the surface of the skin and, with a semicircular to and fro motion, the anterior plate of the sternum is penetrated. A definite sensation of diminution in the resistance of the bone, amounting sometimes to a "trap-door" effect, is felt when the cavity is penetrated. Practice on the cadaver enables one to acquire a clear appreciation of this diminution in resistance.

Once the marrow cavity is penetrated, the ball guard is adjusted and the stylet is removed from the inner needle. A syringe containing about 1 cc. of salt solution is attached to the needle and gentle aspiration is applied. If the needle is properly placed and the marrow is vascular, the blood-marrow mixture will, upon aspiration, flow into the syringe with very little effort. The degree of force required to aspirate the marrow gives some indication of its density. Only 0.1 cc. or less of marrow should be aspirated.

The inner needle, with the syringe, is then removed, flushed through with clear salt solution, and reinserted in the outer needle while alternately aspirating and injecting salt solution through it. The purpose of this step is to remove air from the lumen of the outer needle.

At this point, about 1 to 2 cc. of salt solution are injected into the marrow slowly. Immediately afterward the inner needle is removed and the adapter from the air-free, salt-solution-filled rubber tubing and reservoir is attached to the salt-solution-filled outer needle. *Swiftness of manipulation* is important, to insure against clotting of any marrow in the needle.

Penetration of the bone is accompanied by moderate discomfort. Aspiration of the marrow gives the patient a sensation of drawing, which is slightly unpleasant; when the salt solution is being injected there is also slight discomfort. Once these steps have been completed, no further discomfort is experienced during the infusion. A few of the children went to sleep while the infusion progressed.

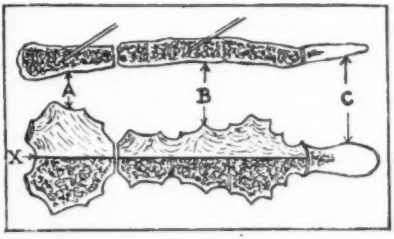

Fig. 3: The Sternum. *Above:* Sagittal section on line X, showing arrangement of marrow and position and direction of needle for infusions into the manubrium (A) and body (B). *Below:* Surface of sternum above line X; below that line, cortical bone removed to show marrow cavities; (C) xiphoid process.

In most instances the flow from the body of the sternum is slow (2 to 4 cc. per minute) at first; then, within 10 to 15 minutes, it is accelerated. If it is necessary to add any material to the burette, it is essential to take the precaution of clamping the tube below the dropper before bringing the burette down, to prevent lowering the pressure in the tubing, which would allow the marrow to run up into the needle and plug its lumen.

Site of Injection

In a child under 3 years of age, the marrow in the sternum is probably not developed to the point that it will allow this site to be used. The sites of choice in babies or young children are the upper portion of the tibia or the lower portion of the femur, at the metaphysis. We have not had enough experience with this method in infants under one month of age to judge of its value in this age group. In a baby, 8 days old, the infusion was abandoned because of a slow rate of flow. But in another, 7 weeks old, 145 cubic centimeters of blood were infused without any difficulty. To avoid the possibility of injuring the epiphyseal cartilage, it is desirable that the needle should be pointed toward the diaphysis of the bone (Fig. 4). The needle

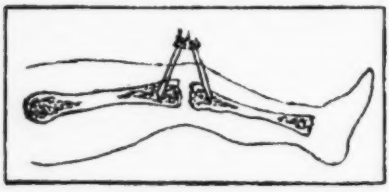

Fig. 4: Diagram of leg bones of infant, showing direction and position of needle for infusion into marrow of femur or tibia.

should be inserted about 2 to 3 centimeters below the proximal end of the tibia, or in the femur, about the same distance above the external condyle. Once the flow has started, the leg should be raised slightly above the level of the body.

In children above 3 years of age, and in some adults, it is preferable that the puncture be made in the manubrium of the sternum. The marrow cavity of the manubrium is relatively larger than that of other bones in young children, and in most adults the rate of flow is more rapid in the manubrium than in the body of the sternum.

Great caution and very little force are necessary in penetrating the anterior plate of the manubrium in children. Needles from 1.5 to 2.5 centimeters long only, should be used, to guard against penetration of the posterior plate. The thinness and softness of the bony plates of the sternum in children do not allow as easy a differentiation to be made between the bone and the marrow as in adults. It is only by aspirating with the syringe and obtaining marrow that the operator can be assured that the needle is in the proper location.

Precautions

The purpose of the double needle is to keep from contaminating the external needle repeatedly with pieces of bone marrow when several aspirations have to be tried during the same puncture. Such repeated aspirations increase the likelihood of producing clotting inside the needle, with consequent obstruction.

Several precautions should be kept in mind. In general, no material should be injected unless a blood-marrow mixture has been clearly obtained by aspiration. If no blood-marrow mixture is obtained upon aspiration it is because: (1) The needle may not be in the marrow cavity. The point of the needle may be in the substance of the bone or beyond the posterior bony limits of the cavity (posterior plate of the sternum or posterior surface of the tibia or femur) or to one side of the cavity; (2) the marrow is not sufficiently vascular because of replacement by cellular infiltration, fibrous tissue, or bone proliferation. The low incidence of failures in the series now being reported indicates that such changes are not common; (3) the distal opening of the needle may be lying against a spicule of bone. Turning the needle about a semicircle may clear the obstruction.

When the sternum is used, care should be taken not to penetrate the posterior plate; if the needle projects far out above the skin it is desirable to equip it with a guard adjustable at any desired level.

It is essential that a clear impression of the width of the bone and its approximate center be obtained by grasping the sides of the bone between the thumb and forefinger. The needle is then inserted in the center of an imaginary line between the two fingers, to avoid pointing it away to one side of the marrow cavity.

No solution should be injected until the air from the lumen of the needle is removed as previously mentioned. This precaution is especially important in infants, who, because of their small size, may not tolerate well an injection of even small amounts of air.

More than the usual care should be exercised to keep the lumen of the needle clear by not allowing a reversal in the direction of the flow in the needle. A decrease in pressure in the tubing allows the highly coagulable marrow to ascend the lumen of the needle and to clot, thereby obstructing any further flow.

If, upon entering the cavity, no marrow can be removed by gentle aspiration, it is likely that no fluid can be injected. Under these circumstances a search for other bones (e.g. tibia) may yield a favorable site. Sometimes marrow may be obtained easily from the manubrium when an attempt at the body of the sternum has failed.

The method would seem to be contraindicated in generalized infections accompanied by bacteriemia; the long permanence of the needle in the marrow may encourage the localization of a suppurating process at that point. No hypertonic or other irritating solutions should, of course, be infused through this route, because of their possible effect on adjacent marrow and bone.

Rate of Flow

The needle has been left in place for periods varying from 7 minutes to 30½ hours. The rate of infusion by gravity is governed to a great extent by the density of the marrow. It has varied between 0.4 cc. and 25 cc. per minute in the manubrium or the body of the sternum of adults; in the tibia or femur of children, the average rate of infusion is between 0.5 and 4.2 cc. per minute, with an average of 1.7 cc.

By means of a syringe (See Fig. 2), it has been possible to inject as much as 43 cubic centimeters per minute intrasternally. Such rapid rates of injection are justified only when the patient is in shock. Fluids can then be given rapidly into the sternum, with the knowledge that the patient does not feel the added discomfort caused by the temporarily increased pressure in the marrow cavity.

The amounts infused by gravity have varied between 50 and 2000 cc. The manubrium of the sternum was used 20 times, the body of the same bone 20 times, and the clavicle twice. When the clavicle was used the flow was disappointingly slow. This is probably because this bone is unusually thick and its marrow cavity correspondingly small. Though the clavicle is easily accessible, the slow infusion rates render it undesirable as a preferred site. In most instances the flow by gravity in the manubrium was more rapid than in the body. The average rate of flow in the manubrium was 3.4 cubic centimeters per minute (range 0.7 to 25.0); and in the body 3.1 cubic centimeters per minute (range 0.4 to 9.1). The same bone has been used as many as three times within 4 days. In one patient, a woman, the manubrium was used on one day and the body of the sternum, on the following day.

Citrated blood, citrated plasma, 5 percent dextrose solution, and plain physiologic salt solution have been infused.

Summary

Fifty-two (52) infusions of various fluids into the bone marrow of 40 patients (33 adults and 7 infants) have been carried out. There were no local, constitutional, immediate, or delayed reactions accompanying or following any of the infusions.

From 50 to 2,000 cc. of fluid have been infused at a rate of flow by gravity varying between 0.4 and 25 cc. per minute.

Either the manubrium or the body of the sternum is the site of election for this procedure.

The intramedullary route is indicated whenever rapid absorption of unchanged substances is desired and the intravenous route is not available.

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Defend Liberty at Home

The fact is that liberty, if it is to be preserved at all, must be preserved intact—by all of us, for all of us. Deny it to any one group, and the chances are that in time it will also be denied to others.

Today we are arming to defend free enterprise and all our other freedoms. To do that successfully, every one of us—and every group—must surrender some liberties temporarily. But we must make sure that we surrender them only temporarily. We must resolve now that the emergency controls over our freedom must end with the emergency, and that no one group shall be permitted to use the current crisis to obtain unfair advantages over another. Unless we do that we may learn too late that we have thrown away the very liberties we are making sacrifices to defend.—Kalends of the Waverly Press.

The Symptom-Producing "Nervous Colon"

By BEAUMONT S. CORNELL, M.D., F.A.C.P., *Fort Wayne, Ind.*

Few conditions can be more annoying, to both patient and physician, than "nervous colon." Dr. Cornell gives some terse and helpful suggestions for its management.

DR. CORNELL

ONLY after taking the history and obtaining satisfactory x-ray studies of the gallbladder and gastro-intestinal tract, may one rule out organic disease of the digestive system. Even when such disease seems to have been ruled out, let us remember that many peptic ulcers and gastric cancers are, at first, hard to find. Yet, when a diagnosis of "nervous colon" (spastic colon, irritable colon, mucous colitis) has been made, there remains, not only the chance of oversight, but also the major problem of effective treatment.

Many colons, which appear excessively spastic in the x-ray films, do not produce any symptoms. To make a diagnosis of "nervous colon" in such a case, is merely to favor the "inventory" type of diagnosis. Again, many persons complaining bitterly of distress referable to the colon, present perfectly normal appearances of this organ in the x-ray study. When satisfied that such pain is arising from the colon, the diagnosis of symptom-producing "nervous colon" is justifiable, even in the absence of x-ray evidence, simply because we must take into account the variations in the pain sensitivity of different individuals. The most inveterate and unremitting case of colonic pain which I have ever seen has never shown any evidence of abnormal spasm in roentgenograms. The patient took to her bed twenty years ago, after supper one evening, with the remark that she would never get up again, and so far she has stuck to it.

The average case, however, does show abnormal degrees of spasm by x-ray study. In many cases, by using a diet low in roughage, a sedative, and some belladonna for a few weeks, the distress disappears, and treatment may later be discontinued.

When the pain is less amenable to ordinary treatment, and where the addition of saline enemas, "pep talks," and vacations also fails to bring comfort, we may be sure that we are confronted with a problem of greater seriousness, which may lie in the fact that we have overlooked some organic disease, and this possibility makes it necessary to repeat the examinations. If negative results are again obtained, so far as organic disease is concerned, and we can find no gallbladder disease, ulcer, cancer, diverticulitis, regional ileitis, etc., then its seriousness lies rather in the now-demonstrated fact that the patient's nervous system is abnormal, or naturally hypersensitive, or that his or her ideas are at fault.

By far the commonest cause of persistent colonic pain such as that described has been, in recent years, the fear of cancer. In these persons, assurance helps, but not so much as repeated x-ray examinations. No doubt the publicity given cancer in lay journals is responsible for the greatly increased cancer phobia, which now renders practice sometimes annoying.

One case of unimproved "spastic colon," for which the patient had been treated for two years, improved when it was found she had a gallbladder full of small stones, and these were removed. Several previous roentgenograms of the gallbladder had failed to show these stones. Another felt better when it was found that he had periodic impaction resulting from a diverticulum, and mineral oil was used to soften the fecal mass. A third patient improved and recovered when it was found that he had amebiasis, and received treatment for it.

Yet, I find that there are possibly a dozen patients with irritable colons who come to me year after year, and whose lives are made bearable by sedatives, belladonna, and a smooth diet. Some of them experience remissions after vacations. Probably, in most of them, one would be able to dig up some sort of chronic fear or some complex in their mental lives. While expert psychoanalysis is not available to most of them because of expense, it is sometimes possible to find out what they are thinking about through ordinary conversation. While sexual matters, especially frustration, are not infrequently responsible, the worries of most of them are not

sexual, but financial, social, or even philosophical. Failure to go into this aspect of the trouble, results in the patient eventually seeking help from the cultists. In this connection, the use of colonic irrigations by the cultists has been successful, in not a few cases, in bringing prolonged relief, and, so far as one can determine, it did no harm. No doubt the medical physiotherapist ought to administer this type of treatment too, and by giving it an improved reputation, make it more common in our therapeutic armamentarium.

The chronic cardiac patient, especially the one with angina pectoris, frequently complains of gastric and colonic distress, which yields miraculously to atropine sulfate. No doubt vague nerve impulses are responsible for these symptoms, and doses up to 1/75 grain (0.8 mg.), three times daily, seem to do no harm, but much good.

Trasentin (Ciba), in most patients, is superior to atropine in nervous colons generally, especially in those who complain of dryness of the mouth when taking the latter drug. Some patients, especially those who pass large amounts of mucus, usually do well on Soricin (Merrell), when this is added to the sedative and antispasmodic medication. Occasionally (and this might be because of allergy), a patient, who seems to be unable to eat anything with comfort, will feel much better if he is given an exclusive dietary of some one article, such as Pablum, and nothing else, for a couple of weeks at least.

Where allergy is suspected as the cause of colonic distress, a good plan is to use Rowe's *elimination diets*, and if this does not narrow down the problem, to give pepsin with each meal.

The treatment of the "nervous colon" is an art, rather than a science. The more the patient is impressed by the physician's seriousness and his equipment and the use he makes of it, the more likely is he to respond to suggestion. Mental perturbation has a way of being reflected in the mechanics of the colon, in some persons. This psychosomatic angle is important—even essential—to success in treatment. Actual *sympathy with the individual* (when we have time and the inclination) is a potent therapeutic agent, if it is not overdone.

It should be noted that there is a "time lag" between the mental state and its expression in colonic spasm. A sensitive person, after the undue excitement of a ball game, usually gets his spasm 24 hours later. Again, even after fear and the various complexes have been relieved through conversation and assurance, it usually takes the colon two or three weeks to "subside."

The vagus nerve possibly deserves experimental study in this type of case. In a patient who experienced a severe attack of angina pectoris while he was before the fluoroscopic screen and just after he had taken a glassful of barium, I noted a coincidental, complete, obliterating gastrospasm. As soon as the anginal pain eased up, the stomach relaxed and the barium came back into view. Possibly, in certain very chronic and resistant cases of colon pain, the surgeons may sometime perfect an operation for relieving the colon of the burden of vagus assault.

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The Beneficence of Death

We are spirits. That bodies should be lent us, while they afford us pleasure, assist us in acquiring knowledge, or in doing good to our fellow-creatures, is a kind and benevolent act of God. When they become unfit for these purposes, and afford us pain instead of pleasure, instead of aid become an incumbrance, and answer none of the intentions for which they were given, it is equally kind and benevolent that a way is provided by which we should get rid of them. Death is that way.—BENJAMIN FRANKLIN.

Emotion and Thought

It is a well known fact that whenever strong emotions are aroused by a dissension of opinion, it is a sign that some basic problem, some instinct-like emotion, more fundamental than the issue formally under discussion, has smuggled itself in, to cloud the issue itself and to interfere with the calm and objective examination of fact.—GREGORY ZILBOORG, *M.D., in* Am. J. Orthopsychiat., *July, 1939.*

Iodolake in Respiratory Diseases

A Report of Further Experience

By C. C. ATKINS, M.D., *Rushville, Ind.*

Acute respiratory infections are probably the most common disorders from which people suffer, and any remedy that bids fair to help us in controlling them is worthy of investigation. Dr. Atkins reports his results with such a preparation.

IN 1938, a report[1] was made on the results obtained from the use of Iodolake* in the treatment of non-specific infections of the respiratory tract. This study consisted of a description of the actions of the medication in a series of unselected patients suffering from a variety of ailments, such as rhinitis, sinusitis, pharyngitis, laryngitis, and bronchitis. The results indicated that this preparation is of definite value, especially when used as an adjunct to the usual forms of treatment.

Iodolake contains a foreign protein, sodium iodide, and iodinated peptone, dissolved in isotonic sodium chloride solution, and is administered by subcutaneous injection.

Pharmacology

The action of iodides in the body resembles that of other neutral salts, with certain significant differences[2]. For example, the iodides are particularly active expectorants, since they increase the secretion of bronchial mucus and render it less viscid. They also have a saline diuretic action, like that of the chlorides, but are more effective, since they are less readily absorbed from the urinary tubules. They are also thought to stimulate glandular activity, to facilitate diapedesis and phagocytosis, to aid in the resolution of diseased tissue, and to increase the elimination of waste products and other toxins.

Iodides are rapidly excreted into the urine, sweat, gastric juice, tears, nasal mucus, bile, milk, and cerebrospinal fluid[3]. The mucus flow of the nose, throat, and bronchi is increased and the secretion is of a more liquid type. This effect is probably due to a salt action rather than to a specific stimulation of the secretory apparatus. In 1923, Stieglitz showed, histologically, that following the administration of iodides they are found in the free border of epithelial cells lining the air passages, apparently for secretion.

In addition to the beneficial action of sodium iodide, the therapeutic action of Iodolake is augmented by its foreign protein content. Following its injection, leukocytosis and mobilization of the immune bodies occur. These processes act to increase the resistance of the patient to the infecting agent, generally without the chill, fever, muscular aching, and general discomfort usually associated with non-specific protein therapy.

Clinical Application

My further experiences with this preparation have afforded confirmation of the conclusions drawn previously. Over a period of five years I have treated 1,500 patients involving some 25,000 injections. In some cases Iodolake represented the sole form of therapy; in other cases it was used simultaneously with local nose and throat treatments.

I found it to be very effective in the treatment of acute and chronic sinusitis, acute and chronic catarrhal conditions of the respiratory tract, colds, and those disturbances associated with influenza. Its initial action is a prolonged liquefaction of mucous secretions of the upper respiratory tract, followed by a prolonged "tonic effect" upon the mucous membranes, including those of the sinuses.

In cases of acute and chronic sinusitis, this therapy definitely promoted drainage and relieved congestion. It was found to be more effective, and the results were of longer duration, when given in conjunction with the usual forms of local treatment. In many cases of chronic sinusitis, the thickening in the sinus cavity gradually diminished and a definite improvement in the condition of the mucosa was noted. It is deemed advisable to continue treatment for one month after symptomatic relief has been obtained.

Relief of symptoms in *chronic sinusitis* following Iodolake therapy was not always permanent, since many patients had a recurrence after severe exposure or with marked changes in atmospheric or weather conditions. Upon retreatment, however, the response was good. Subcutaneous injections of about 2 cc.

*Manufactured by the Lakeside Laboratories, Inc., Milwaukee, Wisconsin.

of Iodolake, at from three-to seven-day intervals, for from one to three weeks in cases of acute sinusitis, and for from three to twelve weeks in cases of chronic sinusitis, proved to be adequate. Approximately three-fourths of all such patients showed marked or complete relief.

A large percentage of the cases of *acute rhinitis*, associated with coryza, can be aborted in the early stages by a single injection. In the remainder, the period of active symptoms was reduced by about one-half. If treatment is started at a later stage, injections should be given every three days until the symptoms have abated. I have observed that patients given this early treatment for the common cold are less prone to develop sequelae such as sinusitis, laryngitis, tonsillitis, and bronchitis. Many patients believe that one or two injections of Iodolake a month, through the winter, afford greater protection from colds than vaccine therapy.

Iodolake has been found to be almost a specific in *influenza*, by combating leukopenia and dryness of membranes. It stimulates the mucous membrane and raises body resistance. The average case will require from two to four injections, at forty-eight hour intervals. In occasional cases, daily injections for two or three days should be given. Moreover, it was observed that secondary complications, like sinusitis and pneumonia, were far less frequent.

Another condition in which I have used Iodolake to good advantage was in patients receiving certain of the sulfa drugs for the treatment of streptococcic sore throat or pneumonia. It was given routinely, in about 2 cc. doses, at the same time at which therapy with the sulfa drug was initiated. It counteracts the tendency of these drugs to cause leukopenia and dryness of membranes, and is also valuable for relieving the catarrhal inflammation that so often follows such infections.

Administration of the medication to patients with *acute tonsillitis* has resulted in rapid improvement. It reduces the frequency of indications for lancing, but is less effective after abscesses have developed. However, acute tonsillitis in children generally can be controlled by the use of this medication alone. Iodolake is also helpful in cases of chronic catarrhal inflammation of the eustachian tubes, when given in small doses in conjunction with tubal inflation. It is decidedly beneficial in *acute otitis media* and mastoiditis, *after drainage has been established*, by paracentesis or mastoidectomy.

It also is helpful, though somewhat less effective, in the treatment of *laryngitis, pharyngitis, allergic* and *hyperesthetic rhinitis*, and acute and chronic *bronchitis*.

In acute laryngitis and pharyngitis, marked relief was experienced by approximately 40 percent of the patients, and about 50 percent of those suffering from acute bronchitis showed definite alleviation of symptoms. However, when used in conjunction with the sulfa drugs in severe bronchitis and laryngitis, better results were obtained. Iodolake is, of course, ineffective when the disturbance is caused by tuberculosis and is *contraindicated* in such cases, since there is a possibility of activating old, quiescent lesions.

Treatment should, of course, be individualized. In general, a 2 cc. dose has been employed in men, the amount used being somewhat smaller in women and correspondingly reduced for children.

No severe ill effect has ever been noted from Iodolake, but obviously there is an occasional iodine- or protein-sensitive individual who does not tolerate this treatment well. However, I have encountered only 12 instances of such hypersensitivity in five years.

In my opinion Iodolake represents one of the outstanding contributions to ear, nose, and throat treatment in the past decade.

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Free Speech

Without free speech no search for truth is possible; without free speech no discovery of truth is useful; without free speech progress is checked and the nations no longer march forward towards the nobler life which the future holds for man. Better a thousandfold abuse of free speech than denial of free spech. The abuse dies in a day, but the denial slays the life of the people, and entombs the hope of the race.—CHARLES BRADLAUGH.

Notes From the American College of Physicians

Part II

Reported by GEORGE B. LAKE, M.D., *Waukegan, Ill.*

THE FEMALE HORMONES

By Elmer L. Sevringhaus, M.D.
F.A.C.P., Madison, Wis.
Prof. of Medicine,
Univ. of Wis. Med. School.

THE female hormones are more complex than those of the male. Of those now known, *estradiol* is the most potent and most important as a growth stimulator. It is unstable and *relatively* insoluble in water (2 mg. per liter, or 20 International Units—I.U.—per cc.), but this is more than a physiologic concentration. In vegetable oils it may be dissolved up to 10,000 I.U. per cc.

Fat people (male and female) are prone to irregularities of the reproductive faculty and to sterility, which may be relieved by reducing their weight. This may be due to the fat diverting estrogens and androgens (sex sterols) to body fats.

Estrogens determine the development of the uterus and breasts from the infantile to the adult type, and also cause vigorous, rhythmic contractions of the uterus. *Progesterone* counteracts this latter effect and is essential to pregnancy.

The *history* will give a reasonably accurate estimate of the sufficiency of estrogens, which may be checked by microscopic studies of tissues from the uterus and vagina.

Estrogens or pituitary gonadotropic hormones may be useful in cases of *scant or absent menstruation*, but treatment must be *individualized*. Pituitary preparations are better for the treatment of sterility, and estrogens for the development of delayed secondary sex characters.

There is no panacea for *dysmenorrhea*, but some cases are improved by estrogens, while others are made worse. It may be well to try the estrogens, in *small doses*, but *without promises* as to the results.

Preadolescent gonorrheal vaginitis may often be cured by estrogens, applied locally.

The chief use of estrogens is for the relief of the unpleasant symptoms of the **climacteric**, and such *relief* is the object of the treatment, *not* the restoration of the menses or of fertility.

Progesterone should not be given before or after the childbearing age. It may be useful in **threatened abortion**, giving 1 mg. or more, *daily*, for a short period. It may also be helpful in interrupting long or **profuse menstruation** and in regularizing the rhythm. In such cases the dose should be 5 mg. a day.

Oily solutions, injected intramuscularly, are most used. Inunctions, with *alcoholic* or oily solutions, are also effective in many cases. Estriol glycuronide and stilbestrol give good estrogenic effects when administered by mouth, and the latter is the least expensive estrogenic therapy. *Pregnin*, given by mouth, may produce good progesterone effects.

RADIOACTIVE ELEMENTS IN MEDICINE

By William J. Kerr, M.D., F.A.C.P., San Francisco, Calif, Asst. Prof. of Med., Univ. of California, and Joseph G. Hamilton, M.D., Clin. Inst. in Neurol., Univ. of Calif.; both Associates in Crocker Radiation Laboratory, Berkeley, Calif.

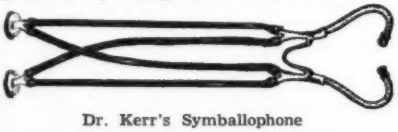
The development of the *cyclltron* (see CLIN. MED. & SURG., Jan., 1939, p. 10 —ED.) has made possible the production of various *radioactive elements* which bid fair to do some things that medicines have never done heretofore, because these preparations apparently go directly and specifically to *certain organs*, where they act only upon diseased tissues in those organs, in much the same way as radium and x-rays act, but *more directly*, simply, safely, and pleasantly.

These radioactive electrons may be *traced* to and recognized in these organs in various ways, including the use of the *symballophone* (a three-dimensional, double-belled stethoscope, invented by Dr. Kerr; see same reference as above.—ED.).

Three of these radioactive electronic preparations have now been used in clinical research experiments, and have produced remarkable results.

Radio-phosphorous, by its effect on the hematopoietic organs in the bone marrow, has produced astonishing improve-

ment in several cases of **polycythemia** and **leukemia**; *radio-strontium* has been followed by comparable results in cer-



Dr. Kerr's Symballophone

tain *malignant diseases of bone*, especially the metastases from prostatic carcinoma; while *radio-iodine* has been used successfully in four cases of goiter.

This work is, of course, still in its experimental stages, but, with the development of a new 100 million-volt cyclotron at the University of California, its possibilities now seem incalculable.

POLIOMYELITIS VIRUS AND FLIES

By John R. Paul, A.B., M.D.,
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Yale Univ. School of Med.

The virus of poliomyelitis remains on flies for several days, and in their gastro-intestinal canals for several hours, so they can transmit the disease by contact or by biting. Probably that is why "polio" is a *summer disease*, like typhoid, dysentery, and *equine encephalomyelitis* (western type), which was first described only 2 or 3 years ago. "Polio" occurs in adolescence; encephalomyelitis in infants and adults.

The virus of "polio" was isolated, last summer, from flies near areas where epidemics were present. One fly stool may contain from 1,000 to 10,000 infective doses of this virus for monkeys. Mice and guinea pigs are not infected.

Apparently-healthy people may be *carriers* of "polio," the same as they may carry typhoid. Probably the virus is also carried by other vectors besides flies. Direct contact is probably a small factor in transmission.

PREVENTION OF PNEUMONIA

By Oswald H. Robertson, M.S., M.D.,
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Prof. of Med., Univ. of Chicago
School of Med.

Pneumococci of Types I and II are rare in normal throats; the others are common. Contact infection is rare in normal animals (including men); and droplet infection does not occur in normal animals (it will when they are intoxicated with alcohol), but can take place in men, rarely.

Ciliary action clears the bronchial tree of bacteria rapidly, and breathing and coughing help. *Not so in the alveolar spaces*, which must be cleared by phagocytosis. *Fluids* passing the epiglottis easily reach the alveoli, especially when they are instilled in the nose.

Predisposing factors to pneumonia are *chilling*, *alcohol*, mild upper respiratory infections, etc. Influenza damages the *lower* respiratory tract and encourages pneumonia. Lobar pneumonia is a local infection. Heavy infections cause extensive alveolar edema, and the spread from lobe to lobe seems to take place by *gravity*, the edema carrying the pneumococci. *Position determines the direction of the spread.* We do not know just how to prevent pulmonary infection, but high general resistance and the size of the dose of bacteria are important factors.

After operations, pneumonia develops from the aspiration of secretions during the anesthesia, so *do not operate* during mild upper respiratory infections; clear out the respiratory passages before operating; after operation, prescribe deep breathing exercises and frequent changes of position, for *postural drainage*.

Sulfa drugs are not a prophylactic of pneumonia, and they *do not help influenza*. When a patient has influenza, observe him very closely, and when pneumonia begins give sulfa drugs.

GERONTOLOGY AND GERIATRICS

By Edward J. Stieglitz, M.D., F.A.C.P.,
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Nat'l. Inst. of Health.

Gerontology is the science of the aging process, which begins with birth and ends with death. *Geriatrics* (the youngest medical specialty) deals with the *care* of those people who are suffering from the results of this process. Chronology and physiology do not always coincide, but old people (whatever their age in years) are as *different* from the mature adult as an adolescent is from an infant, and must be treated on that basis.

"Age" begins, arbitrarily, at 40 years (when degenerative diseases start to appear), and the following 20 years cover the critical period of *senescence*. *We* now need to *know* more about what takes place during these years, and *apply* that knowledge better. The success of prophylaxis depends upon knowledge

In 1850, the life expectancy was 40 years; in 1940 it was 63 years. There are now more than *9 million* people in the United States who are 65 years old or older. Longevity without health may be a national menace; with health, a

great blessing. Preventive geriatrics holds the key to the answer. Control is not cure, but may take its place, as it does in diabetes, heart diseases, etc. "Controllative" methods are important in geriatrics.

Health is *relative*, not absolute. *Constructive medicine* tends to build up health *actively*, but it must be *individual*. Public health measures are of no use here. Protection from menaces is not enough in *endogenous* disorders. Individuality *increases* with age.

Health inventories, to determine physiologic capacities, are of immense importance, but they must be followed by *good counsel* if they are to be of real value. The criteria of health vary with age. The initiative in these matters is with the individual—and *inertia is deep!* The importance of these matters must be *reiterated* until an impression is made. We have no *right* to health except as we earn it by effort. The adult should begin, *now*, to prepare for senescence and senility.

HEAT TREATMENTS

By Stafford L. Warren, B.S., M.D.,
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Rochester, N. Y.

In order to give general heat treatments, it is not necessary to use an elaborate and expensive hypertherm apparatus or a short-wave machine. This does not mean that these methods are useless (they are definitely valuable in certain cases), but merely that they are not *essential*, since good results can, in many cases, be achieved by simpler means, within the reach of every clinician whose patients have a bathtub available.

Put the patient in a tub of hot water (106° F.) for 15 minutes, and his temperature will rise 2° F. Then put him, promptly, in bed and cover him with blankets, where it will rise a little more and *stay up* until the blankets are removed. Such treatments are decidedly helpful in **arthritis** and other conditions.

Heat erythema may follow *any* form of heat treatment. Burns and other lesions may also occur unless great care and watchfulness are used.

During any heat treatment, give 1 gram of salt (sodium chloride), in solution, every hour, and *watch the water-salt balance*. If the patient sweats and urinates during the treatment he has enough water in his system.

For *delirium* developing in a heat cabinet, whiskey is a good narcotic; but if the disturbance is severe, the patient may need Evipal, given intravenously.

Paresis, if treated *early*, can be relieved by treatments lasting 10 or 15 hours at 106° F., and the patient can be back at work in *six weeks*, with no return of *symptoms* after several years, though the Wassermann test may not always be clear. About 35 percent of such cases (many of them *severe*) have shown good remissions.

About 50 percent of the care of an arthritic patient is psychic, and the simple method outlined in the beginning is practical for them to carry on at home (after foci of infection have been cleared up), making *monthly reports* of their morning and evening temperature and pulse rates; the number, duration, and temperature of the baths they have taken; the medicines they have used; and other points of interest. This method is *not specific*, but merely an adjuvant to other indicated treatment.

Every time a joint flares up, the patient can be put in a tub of hot water covering all but his head, as suggested; then put to bed—with a dose of 10 grains (0.65 Gm.) of aspirin (acetosal)—and kept there until the mouth temperature is 101° F. Such a treatment can safely be taken several times a day, if necessary, and does as much good as a session in a hypertherm cabinet.

Another method is to suspend an electric bulb near the joint, in a cage in bed, until it is well heated, and then have the patient get under a hot shower and stay there until he can move without pain. A wet dressing on a joint can be kept hot by a 25-watt bulb suspended 4 or 5 inches above it, adding salt solution or water as required to keep it wet.

Arthritic patients should always wear warm clothes and avoid over-fatigue.

EPILEPSY AND BRAIN WAVES*

By William G. Lennox, Sc.D., M.D., A.M.
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Sedative drugs will not correct the basic disorder in epilepsy, but they will *reduce the number of seizures* by diminishing nerve irritability. A child who was having from 200 to 300 petit mal attacks every day had the seizures reduced to 2 or 3 a day by sedative drugs, and is now earning her living as a secretary.

The *causes* of epilepsy may be emotional, somatic, or brain damage (worst), *plus a tendency*, which may or may not be hereditary. About 70 percent

*Based on a study of 2,000 patients.

of these patients have some degree of brain disturbance. In the others the exact cause is unknown, up to now.

It seems possible to demonstrate *hereditary cerebral dysrhythmia*, by means of electro-encephalograms (*brain waves*—"E.E.G."), of which 18 types are now recognized, the normal ones showing 8½ to 12 waves a second.

Migraine seems to be allied with epilepsy, since sufferers with this malady show the same types of brain waves as those seen in epileptics and their relatives.

Different types of seizures show various brain-wave patterns, but every patient varies somewhat from every other; and tracings made from the same patient at different times vary.

Predisposition is a factor in all diseases, and it can be *demonstrated* in epileptics and their relatives. The E.E.Gs. of *identical twins* cannot be distinguished from each other. (56 pairs have been studied).

A study of 68 *families* has shown that it is possible to determine whether the epileptic predisposition comes from the father or mother. Among *all* relatives of epileptics, 52 percent were found to be abnormal and 11 percent doubtful. In 27 percent, *both* parents of the patient were abnormal; in only 8 percent of cases were both parents normal.

There must be some form of brain damage to activate the predisposition. We find 20 persons with dysrhythmia to 2 or 3 percent who have epileptic seizures.

Brain-wave patterns can be *changed* to more normal patterns by mental activity; by oxygen plus carbon dioxide; or by drugs, especially Dilantin Sodium.

Behind the brain waves stands the chemistry of the body and its electric potencies. Brain damage may cause seizures in one who has had normal brain-wave patterns. Eugenics or chemical treatments seem to be the solution of this problem—but first we must know more about *brain chemistry*.

COLD TREATMENTS

By Lawrence W. Smith, A.B., M.D.,
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Prof. of Pathology, Temple Univ. School of Med.

The *general* use of cold in medicine is relatively new, is still more or less experimental, and is variously known as crymotherapy, hypothermia, or (by the newspapers) "frozen sleep."

Chilling of the whole body produces definite changes in embryonal cells, and possibly in malignant ones, which is the basis of its use in cancer. Fibroblasts grow more compact, with less collagen, at 25° C. than they do at higher temperatures, thus producing smaller, firmer scars and more rapid healing.

Cold has been used locally, for many years, for relief of pain, and (as carbon dioxide snow or "dry ice") for destruction of diseased tissues. Cold *penetrates*, from local, external applications.

I have seen a "hopeless" cancer of the bladder kept for 133 days at a temperature of 40° F. the tumor cleared up and the patient is now living and at work, four years later. I have also seen a sloughing, stinking cancer of the breast clean up and heal after 5½ months at 40° F. The patient died, later, of metastases.

The pain is relieved almost at once by this treatment, which may be continued for days, weeks, or months, though from 48 to 96 hours of cold will generally clean up sloughing skin cancers. It is an excellent *palliative* (as good as or better than radium), even if there is no hope of a cure; and makes a good *preliminary* treatment when radium is to be used.

Cold is also useful in severe, continuous, and indeterminate *headache*, and may also be used over the abdomen to relieve pain.

In **circulatory diseases**, especially peripheral vascular disorders, cold, as a *preoperative* treatment, minimizes shock and improves the patient's general condition. Drain the affected limb of blood and put on a firm tourniquet to shut off the arterial circulation completely (as one would do for an amputation). Then pack the limb in ice to keep it at 35° or 36° F. and keep it so for three or four days. This is safe, as tissue activity is *suspended* at this temperature. If the limb is allowed to become warmer, thrombosis and gangrene may follow.

After amputation, the stump should be kept at 50° F. during the process of healing. It will never become infected or necrotic.

General cold treatments ("frozen sleep") can be used at from 70° to 75° F., for 24 hours or more, producing pseudo-hibernation; but we must knock out the reflex heat-regulating mechanism, with small doses of Evipal, before beginning the treatment, or the patient's *shivering* will keep his temperature up.

This treatment is excellent in *infections*. We have used it only in "hopeless," terminal cases of deep-seated *cancer*, so we have seen no definite *curative* results, but it *does* control the *pain*

for considerable periods, and can be repeated. In **acute schizophrenia** it has been used for less than three years, but so far it has given better results than the shock treatments.

PROBLEMS OF AGING

By E. L. Tuohy, M.D., F.A.C.P.
Duluth, Minn.

The latest census showed that the general population of the United States had increased 7 percent in 10 years, while the number of people 65 years old or older had increased *more than 35 percent*. This emphasizes the problems of aging; and we must not overlook the idea that life has *breadth*, as well as length.

Theoretically, a person eating an optimum diet needs no extra *vitamins*, but this does not always work out, especially in older people. We have to consider the factors of absorption, utilization, and excretion, as well as ingestion. Most elderly people need some extra vitamins, prescribed *individually*. All those past 80, and all patients who are unable to eat for two weeks or more, should have a rather full "ration" of *accessary* vitamins, especially vitamin A.

Fatigue and exhaustion are important problems in older people. The energy reservoirs of the body are the liver, the muscles, and the skin, and these can be replenished, in diabetic patients, by giving insulin. It is a good general policy to treat all old people as if they were mildly diabetic—give them a *balanced diet* and *small doses* of insulin (5 units daily, or two or three times a day, as indicated); also give them liver extract and iron rather regularly. If fatigue is due to *overuse of energy*, stimulants are *harmful*.

Fifty percent of all patients die from *cardiovascular diseases*, and there is a definite relation between these and diet and overweight. Fats are probably the greatest source of trouble in the aged, and should be reduced to about 15 percent of the total caloric requirement. If there is a family history of *coronary disease*, the *animal* fats should be sharply reduced.

Obesity developing *after the age of 20* is more dangerous than that existing throughout life, because the body is not *built for it*.

Exercise is a matter of individual structure and temperament, and is largely a question of *keeping in condition*,* using sense and *temperance* in all things. Remember that 80 percent of surgical patients past 65 have postoperative complications, *and get them in shape before operating*.

To live to a *serviceable* old age, one must begin to prepare for it *early*—certainly before the age of 40 years. A man with a one-track mind *dare not retire*; but one with broader interests may do so with safety and pleasure.

*See CLIN. MED., Sept., 1941, page 206.

Today's Problem

The wisdom we show in the months ahead will determine the course of our nation for a long time to come. We are at the crossroads in America. It is time that we realized that this is a fact and not merely a phrase. Unless we come through this crisis with Democracy safe and our free enterprise system truly free, all of our other problems of today will be of little importance.—Kalends of the Waverly Press.

Professions, Old and New

The physician is an individualist, inclined to mind his own business, going about his daily routine of aiding the sick in his own way as he has learned by instruction and experience, suffering within himself the knowledge of his own mistakes and shortcomings, growing stronger by the rebuffs of fortune and economic change, and by the competition of his fellows and the criticism of those outside the profession.

The social worker, dealing with economic ills and human relationships, is inclined to theories that sometimes attain magnificent scales. He deals with large groups and movements and trends; he works with other people's money and suffers little responsibility for failures and mistakes. The physician can not always administer other treatment when failure attends one plan of therapy; the social worker can always take up a new experiment to work on the body politic.—LEWIS T. BUCKMAN, M. D., in *Penn. Med. J.*, May, 1942.

A LIVING FOR THE DOCTOR

THE BUSINESS OF MEDICINE AND THE ART OF LIVING

National Physicians Committee

AT THE recent meeting of the A.M.A., the House of Delegates officially approved the educational efforts of the National Physicians' Committee for the Extension of Medical Service ("N.P.C."); and in another resolution, accepting responsibility for doing everything possible to maintain the individual freedom of physicians, embodied this statement:

"To this end we recommend that a definite part of each program of every component member Medical Society be devoted to a reconsideration of the traditions, the standards, the freedoms, the effects of the absence of restraints and outside controls which have contributed so materially to American Medicine's achievements."

On June 10, Dr. Edward H. Cary, past-president of the A.M.A. and chairman of the board of trustees of the N.P.C., remarked:

"We must ever keep in mind that if the war continues two or more years, with an ever deepening intensity, we shall have established the machinery for and possibly may have developed the habit of providing medical care through an agency of government. The public cannot know what this service is, how it works, and of its relative effectiveness unless they are told. It has become definitely the responsibility of Medicine to keep the public informed. This is a direct responsibility of N.P.C."

On June 13, an editorial in the *Saturday Evening Post* stated:

"Others fear that, without deliberate choice or decision, the patterns of State control may be so firmly planted in our way of doing things that it will be all but impossible to abandon them and return to the traditional system, even considerably streamlined. This is a real danger, which must be reckoned with."

These three statements point to the responsibility of *every physician* to take part in educating the public as to the vastly important part the American medical profession has played in the progress of our country, and will *continue* to play if it is not hampered by politicalized Medicine.

If *you* are not taking part in this effort, write *at once* to the National Physicians' Committee, Pittsfield Bldg., Chicago, Ill., asking how you can best help in this *vitally important* work. G. B. L.

✦

Shadow of Socialized Medicine

While war news grips the headlines and the attention of the people, a movement is underway that would regiment the practice of medicine in this country. It is now urged that the social security taxes be increased one percent. The additional revenue raised would be used, in part, to guarantee every insured worker and his dependents hospitalization benefits to the extent of three dollars per day during illness.

The effect of this on hospitals would be obvious. First, few if any hospitals could care for patients at three dollars a day and long remain in operation—the rate is completely inadequate. The inevitable result would be forced deterioration in service to meet the arbitrarily fixed price. Second, the voluntary hospital system, which has grown rapidly and produced excellent results, would be discouraged. Lastly, in the long run, the plan would open the way for additional government encroachment into all branches of medicine—and once that happened, socialized medicine would become a fact.

The existing American hospital system is based on the tenet that the care of the sick is one of the highest moral functions of mankind. The typical hospital is not a profit-making institution. All its revenue is spent for maintaining and improving its services. Finely-equipped hospitals, financed both by local government and by private endowment, exist to serve the person without means. Nowhere else in the world is such abundant medical service available to all as in this country.

This is not the time to debate a measure which would tend to make medical care a definite province of centralized government. Write to your Congressman.
N.P.C.

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The Problem of the Wrong Tooth

"Jesse Sargefield is certainly my toughest patient, as far as getting any money out of him is concerned, although there are others who have strong claims to that distinction," Doctor Medico assured himself, "and I don't suppose that $100 note of his is worth the stub pen it was written with, but I might as well have my lawyer sue him, and see what we can get. It might scare some of the others into paying."

Ten days later Medico's lawyer called to "report progress."

"I sued Sargefield, as you ordered, but he went straight to that cheap shyster, Ex Wye Zee, who put in an offset claim for malpractice—says you pulled the wrong tooth for him last July."

"That's no offset. It's plain blackmail," the doctor protested. "If I'd thought twice I wouldn't have bothered suing him, but if that's his game I've got to go ahead to protect myself."

"Yes, that's right. If you drop the suit now he'd tell all over the country that he scared you off by bringing in an offset for malpractise. I'll get it on for trial at the next court," the lawyer agreed.

Three weeks later the case came to trial, both parties gave evidence, and Judge Enright left the following questions to the jury:

1. Does the defendant, Sargefield, owe Doctor Medico the $100 note sued on?

2. Was there any negligence or want of professional skill on the part of Doctor Medico in treating said Sargefield?

The jury deliberated 10 minutes, answered "yes" to the first question, "no" to the second, and added a rider, "We would not believe Sargefield on oath, even if we knew he was telling the truth."

"I suppose my $100 verdict isn't worth that many cents, but that rider is worth $100 in my practice," the doctor assured himself.

Three days later, however, he received a letter from Sargefield's lawyer threatening to bring a separate malpractice action for pulling the wrong tooth.

"Looks as if I will be in law with this man Sargefield for the rest of my life," the doctor complained, but his lawyer was able to assure him that the malpractice suit wouldn't get anywhere, as the claim for malpractice had been tried and decided in the first suit.

"The verdict in the first case is conclusive between the parties and cannot be re-tried in another suit," the Illinois Courts have said in laying down the general rule.

Suppose, however, that Sargefield had not brought in an offset for malpractice in the original suit, and had then brought an independent action for damages.

"One cause of action cannot, in and by itself, when merged in a judgment, carry with it another cause of action, however closely the two may be connected," say the Minnesota courts in ruling in the patient's favor, and the Ohio, Tennessee, and Wisconsin courts have arrived at the same conclusion.

In New York, on the other hand, the courts of that state have ruled in the doctor's favor.

"It must be as considered as settled, in this state, that a judgment in favor of a doctor for his professional services is a bar to an action for malpractice by that patient against that doctor for malpractise in rendering those services," is the reasoning of the New York Court of Appeals.
—M.L.H.

[There have not been enough requests for the continuance of these medico-legal problems to warrant our asking Judge H. to send us more of them. This one had been mislaid, and is positively the last, unless we hear from a number of you, *promptly*, asking for more.
—Ed.]

◆

Government Employment

We, as a profession, are asking the government to take us into its employment literally on its own terms. If so, we will find ourselves ultimately in a status not much above that of a third grade civil service clerk. Don't let us be gulled by the bait of a pension, for we already know how miserly they are.—*South African Tydskrif vir Geneeskunde*, Feb. 24, 1942.

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The whole of Clinical Medicine is excellent, and *Thumbnail Therapeutics* and *Diagnostic Pointers* are most valuable to me.—F. B. H., M.D., N. Y.

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Prayer is not forcing God's reluctance; it is taking hold of God's willingness.
—Phillips Brooks.

◆

The obvious is at the base of all boredom.—Melville Davisson Post.

GRADUATE COURSE

V. Diarrheal Diseases

A Gastro-Enterologist's View of Diarrheal Conditions

By ANTHONY BASSLER
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DIARRHEA as a symptom is found in a vast array of diseases and disorders. Various attempts at classification have been made, but none of them is sufficiently inclusive. To classify them on a functional, organic, anatomic, acute, or chronic basis serves no satisfactory purpose.

Diarrhea may be gastric in origin and be due to true achylia (atrophic gastritis), this occurring in about 10 percent of dyspeptics, but achylia also occurs in a great variety of other conditions (cholecystitis, pernicious anemia, posterolateral sclerosis, pellagra, etc.).

It may follow a gastrojejunostomy, due to too rapid emptying of the stomach and jejunum, or be due to extensive intestinal resections, in which sodium chloride deficiency usually figures. Occasionally it is the result of a gastrojejunocolic fisutla.

The various inflammatory causes, seen in instances of enteritis, ileolitis, and enterocolitis, arise in the small intestine. In these the causes range all the way from acute dyspeptic diarrhea, due to food or climatic conditions, to the infectious states of typhoid fever, cholera, bacillary dysentery, botulism, and the anatomic states due to new growths in the bowel.

In infancy and childhood, diarrheas are met with in cholera morbic states, poor feeding, and various infectious conditions.

A chronic diarrhea is often present in phthisis, chronic nephritis, alcoholism, and any condition causing venous stasis. Again, it may be due to parasites in the small intestine, which would figure in instances of infestations like giardia, *Trichomonas hominis*, cercomonas, or the larvae of stronglyoides and unicinaria. Sometimes diarrhea is caused by the flagellate group.

We now arrive at the most important causes of diarrhea, these being in the more important diseases of the large intestine. Among the most prominent of these are the various dysentery infections, from cholera, bacillary dysenteries, and idiopathic ulcerative colitis, to amebic dysentery.

In this country, the infections due to the various strains of the paradysenteric organisms, in both acute and chronic forms, are far more common than are being diagnosed, the same being true regarding infestations with the *Entameba histolytica*. Cases of these kinds require careful laboratory procedures for both diagnosis and treatment.

Ulcerative colitis is definitely on the increase, and there is no disease of the digestive tract that can wreck the health of young people more pronouncedly than this one. It is unfortunate that this disease is so often being temporized with and handled with useless types of therapy. Cases of advanced destruction of the colon are constantly being met with, that require even ileostomy and colectomy, when they could have been stopped, before the colon was destroyed beyond repair, by proper medical means. Until medical men use a proctoscope as regularly as they do a stethoscope or blood pressure apparatus, and become interested in the treatment of inflammatory conditions of the rectal mucosa, this disease will continue to increase, because most of these cases begin low down in the canal.

Amebic infestations are exceedingly common in the United States. There are ameba carriers around us all the time and, strange as it may seem, it is nevertheless true, that the distance between the discharges from the alimentary canal and another person is far shorter than is generally believed.

One may see diarrhea in both malignant and benign tumors of the colon,

and in some instances of diverticulitis. Uremic ulcers of the large bowel should be mentioned. The diarrhea of regional ileitis must always be kept in mind.

Diarrhea is not uncommon in diseases of the pancreas, in some cases of chronic cholecystitis, syphilis of the intestine, and diseases of the absorptive system (mesenteric tuberculosis, sprue, pellagra). To these should be added the diarrheas in fermentative dyspepsia, nervous disorders, reflex diarrhea, emotional and psychogenic diarrheas, and those due to allergies, etc.

Since it must now be plain, to repeat my opening statement, that "diarrhea as a symptom is found in a vast array of diseases and disorders," the modern and scientific clinical handling of these patients requires, not some doses of an opium preparation, bismuth, and an effort of dieting, but a *good doctor* and *painstaking examinations*. For the simple digestive types of diarrhea, lasting only a few days, simple means may suffice; but when a diarrhea does not cease in a few days, the plan should be a much more serious affair. This is modern medicine, and every patient with a diarrhea complaint who goes to a physician today is entitled to have painstaking attention.

121 E. 71st St.

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Chronic Diarrhea

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CHRONIC DIARRHEA oftens presents a difficult problem, diagnostically as well as therapeutically, for two reasons. (1) Our diagnostic armamentarium for the intestine is wholly inadequate. For all its portions except the sigmoid and the rectum, there is no endoscopic method to determine whether or not inflammation is present; and the diagnostic methods for the discovery of functional disorders are not well developed either. (2) The one method which, in many cases, would permit a rational therapeutic approach—the careful microscopic examination of the stools after a test meal—is thoroughly disliked by the practitioner.

A warning should be sounded. In many cases in which no organic disease can be demonstrated, the physician is inclined to diagnose "functional" or "nervous" diarrheas. Both terms convey to the patient the impression that his disease is a psychogenic one. There is no doubt that purely psychogenic diarrheas exist. The best known examples are the transitory diarrheas of stage- and examination-fright. With rare exceptions psychogenic diarrheas are a symbol; they represent the somatic manifestation of fear. Telling a patient that he subconsciously is afraid of something could be tolerated in the past, but now, with war raging; neither a soldier nor a civilian must be accused of subconscious cowardice.

There are numerous degrees and different types of inflammation of the huge mucosal surface of the intestine, and as long as there is the slightest doubt, especially if the psychogenic nature of diarrheas cannot be demonstrated directly, the diagnosis should be made in favor of the organic disease. Improvement of a symptom by psychotherapy is not a proof of its psychogenic origin, and still less does the presence of a psychoneurosis in patients with diarrheas suggest the psychogenic origin of their diarrheas. It must not be forgotten that many patients suffering from continuous organic diarrhea develop a secondary hypochondriac attitude and social shyness which is so obvious that the primary organic disease may be easily overlooked.

Chrónic diarrhea may be the outstanding symptom of numerous organic diseases. Therefore the most careful physical examination is necessary in every case. Important diagnostic methods will be indicated in the following discussion by italics.

I. Diarrheas in diseases of organs other than the gastro-intestinal tract.

1. *Poisons*

In these times of mystery stories and mass poisonings, it should be remembered that chronic diarrheas are an important symptom of arsenic poisoning. Arsenic can easily be demonstrated chemically in the excretions. Mercury poisoning is rarer. Lead poisoning produces diarrheas only exceptionally.

2. *Uremia*

If diarrhea is the chief subjective symptom, uremia is easily overlooked. The diarrheas are caused by vicarious excretion of urea into the intestine. Examination of the urine for albumen, taking of the blood pressure, and eventually determining the non-protein nitrogen in the blood, will establish the diagnosis.

3. *Anaphylactic Diarrheas* may occur so frequently as to simulate the picture of chronic diarrheas. The case history will show that they are produced only by

certain food, and other allergic symptoms, such as urticaria, may be found.

4. *Lung Tuberculosis*

Chronic diarrheas, in the initial stage of lung tuberculosis, probably originate on an anaphylactic basis. *X-ray studies of the chest must not be forgotten.*

5. *Addison's Disease*

There are often severe and quite intractable attacks of diarrhea, hyperperistalsis with hypersecretion, and severe pain, resembling tabetic crises. The abnormal pigmentation, blood chemistry, etc., will permit the diagnosis.

6. *Pernicious Anemia*

Diarrheas, like many other gastro-intestinal manifestations, are frequent in this disease. They usually disappear after adequate specific therapy. *Don't forget a complete blood-cell count!*

7. *Pellagra*

Diarrheas in pellagra are usually a late symptom. The characteristic tongue and skin lesions will permit the diagnosis. *Treatment*: nicotinic acid, 25 mg. three times daily, as an injection.

8. *Thyrotoxicosis*

Two forms of diarrheas are seen: (1) Severe attacks of watery diarrheas, from 30 to 40 stools a day being passed, sometimes with fatal outcome. *Treatment*: Enemas, with the addition of adrenalin (epinephrin); (2) fatty diarrheas, subsiding with the general treatment of the thyrotoxicosis. *In doubtful cases determine the basal metabolism.*

9. *Tabetic crises*

Severe diarrheas are less frequent than pain and vomiting; they do occur, however. A careful neurologic examination and *Wassermann test* should be carried out.

10. *Reflex diarrheas*

In diseases of the prostatic gland, of the ovaries, of the bladder, diarrheas may occur.

II. Diarrheas in diseases of the gastro-intestinal tract.

11. *Parasites*

The presence of tapeworms, ascaris, etc. rarely causes diarrheas, but may be suspected if a definite eosinophilia of the blood is present. *Giardia lamblia*, often symptomless, sometimes causes diarrhea. The parasites are found at *biliary drainage*, or their cysts in the stools. Treatment with *Atabrin* leads to cure.

12. *Carcinoma*

The fact that *diarrhea may be the very first symptom of carcinoma of the stomach* is almost unknown. In beginning carcinoma of the intestine, especially of the colon, diarrhea is as frequent as obstipation. Therefore, *no case of chronic diarrhea must be treated without careful x-ray examination.* Diarrhea may be the first symptom of carcinoma of the rectum. Because of the excellent surgical prognosis of this disease when diagnosed early, *ommission of digital exploration of the rectum in chronic diarrhea is an unforgiveable mistake!* If the war now brings about a shortage of rubber gloves, rubber fingers will be available which, at their base may be surrounded by a ring of cotton for protection. The continuous absence of *occult blood* in the feces after a meat-free diet speaks against malignant tumor.

13. *Lymphoblastoma*

At x-ray examination, a typical pipeline enlargement of the organ is seen. This diagnosis is important because of the splendid results of x-ray therapy.

14. *Polyposis*

Sigmoidoscopy or x-ray-relief examination will reveal this serious disease. If the polyposis is restricted to only a portion of the large intestine, surgical removal should be undertaken.

15. *Tuberculosis of the intestine*

If, in a case of advanced lung tuberculosis, diarrhea occurs, involvement of the intestine, especially of the ileo-cecal region and of the rectum, can be assumed. X-Ray examination and proctoscopy may reveal characteristic pictures.

16. *Rare Granulomas*

Syphilis and actinomycosis of the intestine are so rare that they need no discussion. There is an *intestinal form of Hodgkin's disease* which, in the beginning, is usually overlooked. Intermittent attacks of fever, with anemia and occasional itching of the skin, may suggest the correct diagnosis. Lymphogranuloma venereum, mostly found in colored patients, leading to strictures and often necessitating colostomy, may be seen protoscopically, and the diagnosis may be established by the *Frei skin test.*

17. *Leukemia*

Leukemic affections of the intestine are rare, but may lead to diarrhea. *Blood count!*

18. *Sprue*

The fatty, copious stools of sprue are rather characteristic. Liver treatment effects a cure.

19. *Amyloidosis*

Amyloid disease of the intestine is not frequent. It leads to entirely intractable diarrheas, which even massive doses

of opium will stop only transitorily. The presence of chronic suppuration, chronic syphilis, or tuberculosis, together with enlarged spleen and liver and large amounts of albumin in the urine, will permit diagnosis.

20. *Gastrogenic diarrheas*

The opinion that disease of the stomach alone will not produce diarrhea is now widely accepted. Diarrhea in gastric disease suggests concomitant disease of the intestine. However, findings of severe gastritis, at *gastroscopy*, may indicate a concomitant inflammation of the intestine. Histamine-proved anacidity, found in *gastric analysis*, and gastric atrophy, seen at gastroscopy, may help to confirm the diagnosis of pernicious anemia.

21. *Pancreatitis*

Copious stools are present, containing large amounts of fat; at microscopic examination, many undigested muscle fibers are found. There is often epigastric pain, radiating to the left side. Substitution therapy will be discussed later.

22. *Diarrheas after gastric operations*

These diarrheas occur frequently. Careful regulation of the diet after each gastric operation is necessary. The worst complication after gastric operation is the

23. *Gastro-colic fistula* which, however, may occur without operation, in cases of gastric carcinoma. The appearance of entirely undigested food in the feces permits the diagnosis. In the cases following operation, operative closing of the fistula becomes imperative.

24. *Terminal ileitis*

Diarrheas, together with a mass in the right lower abdomen, fever, anemia, and a typical x-ray picture, are characteristic of terminal ileitis, the treatment of which is surgical.

25. *Chronic bacillary dysentery*

In war times, in soldiers who have been under actual combat conditions, this is one of the most common causes of chronic diarrhea. The case history and *agglutination tests* may confirm the diagnosis. Some severe cases lead to emaciation, dehydration, and "mendicants posture" (especially after Shiga infection); in others the patient is relatively well and able to work. X-Ray examination may reveal signs of mucosal destruction, narrowing of the lumen, and absence of haustral markings. *Sulfaguanidine* is considered to be of value in treatment.

26. *Chronic amebic dysentery*

The history, the proctoscopic findings, the findings of cysts or trophozoites in the stools, and the x-ray findings (similar to those described under 25) will permit the diagnosis. Often a rapid cure will be effected by administration of *Yatren* (Chiniofon).

27. *Chronic ulcerative non-specific colitis*

Because of its doubtful prognosis, this serious disease must not be overlooked. *Proctoscopy is indispensible.* X-Ray examination will reveal pictures similar to those described under the heading of "Chronic bacillary dysentery" (25).

28. *Diverticulitis*, like other inflammations of the colon, may produce diarrheas. Tenderness of the sigmoid, together with the x-ray evidence of diverticula, will permit the diagnosis.

29. *"Mucous colitis" (Colica mucosa)*, characterized by painful attacks of passing large amounts of mucus, has often been considered to be a neurosis. Probably it constitutes a separate form of true chronic colitis. The attack often requires administration of codeine or morphine; between the attacks, continuously, rather large doses of *atropine* should be given.

30. *Chronic simple enteritis, colitis, enterocolitis*

These are the most frequent causes of chronic diarrhea. The objective diagnosis is difficult, although large amounts of mucus in the feces speak in its favor. Usually the diagnosis is made by exclusion. Their cure often is not easy, but rational *treatment* is most gratifying. Treatment of other forms of diarrheas has been briefly mentioned in the respective paragraphs, but it should be added that, in intractable diarrheas occurring in fatal diseases, large amounts of opium should be used together with bland diet; *in other cases opium should not be used.*

Bismuth subgallate is one of the best anti-diarrheic drugs. One should start with large doses (1 Gm., four times daily), to be reduced daily by 1 Gm. to 1 Gm. once daily. The patient should be warned that the stools will become black.

The efficiency of *enzyme substitution therapy* is definitely under-rated in all textbooks. In all cases in which immediate dietary treatment is impossible, as, for instance, under many war conditions, enzyme therapy is most gratifying if the preparation used contains a multitude of the various enzymes of the gastro-intestinal tract and bile; if it has a thoroughly reliable coating preventing

it from becoming destroyed in the stomach; and if large amounts are given.

The chief goal in *dietary treatment* in chronic enterocolitis is to avoid abnormal decomposition of the food, and in order to achieve this in a rational way, the treatment should be started with a test diet. The Schmidt test diet, to be given over a period of four days, consists of:

1. Milk (or tea or cocoa with milk)
2. Rolls with butter (plenty)
3. Soft boiled eggs
4. Ground beef (slightly roasted, but inside rare)
5. Generous servings of mashed potatoes (the mashing must not be too fine; there must still be gross pieces of potato present)
6. Cream soups

(Some red wine or consomme are permitted. No vegetables nor fruits nor fruit juices).

The feces of the fourth day are examined. Fermentation (development of air bubbles) is often seen grossly. Three microscopic slides are prepared: (1) stool with water; (2) stool with Lugol's solution; (3) stool with one drop of acetic acid, 30 percent. This last slide should be heated somewhat.

In the normal test stool, very few remnants of muscle fibers and rare empty potato cells are found. Pathologically, in abnormal putrefaction, connective tissue and large amounts of distinctly striated muscle fibers are found. In the preparation with acetic acid, increased amounts of fat are easily recognized; in cases of abnormal fermentation, large amounts of potato cells containing starch are seen; and in the Lugol preparation, blue or purple starch is often found. After this diagnostic initial stage, the true dietetic regime may be started; it can be indicated here only superficially.

In prevalent *putrefication*, at first all kinds of food containing protein—meat and eggs—must be eliminated, as well as all kinds of roughage. A pure sugar diet, in the beginning, should be replaced, after two to three days, by milk and fine cereals. Still later, toast, cottage cheese, and red wine may be added. Ground fine meat (chicken, fish) and pureed vegetables *must not be given before the third week.*

If *fermentation* is prevalent, the initial diet may consist of fine, soft-ground meat, fish, eggs, cheese, consomme, and butter (spread on hard cheese), but *must not contain carbohydrates.* These (cane sugar, fine-grain meals) may be added in the second week. Zwieback, toast, and noodles may be added from the third week on. The transition to a normal diet should be very slow.

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Diarrhea in the Infant

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DIARRHEA is a symptom. In the infant this may be a symptom of minor trouble or a forewarning of a serious illness. Far too many times, the onset of a diarrheal condition is described to the doctor over the telephone, and an attempt made to correct a condition which will be conquered only when a more thorough study is made and a diagnosis reached.

For the sake of clearness, diarrheas may be classified in a simple fashion. There are too many classifications made, many of which are confusing. Nevertheless, the physician should make a definite attempt to determine the underlying cause, in order to treat the child more correctly and prevent prolongation of the condition to the serious stage.

Classification

Epidemic diarrhea of the newborn is a serious, acute, communicable disease, usually involving nursery infants. This disorder is discussed at length in the literature. *Prophylaxis* is paramount, since very little is known regarding the etiology and there are few drugs of value.

The number and character of normal stools in the newborn is well known to the doctor, but lack of this knowledge may cause disturbance in the average household. Alarm on the part of the mother may not be necessary, if patient explanation is given. Particularly do breast-fed infants have more and softer stools than the average bottle-fed baby. True diarrhea, however, is a sure sign that something is wrong.

The mere onset of a condition where more bowel movements than usual occur, is no cause for the elimination of breast milk. Usually the infant will correct this condition of his own accord, if the mother can be kept calm and cooperative. Monthly cycles in the mother's life, relative to menstruation, whether menstruation actually occurs or not, seem to cause some derangement

of the infant's digestion. This can be relieved in a short time if the infant is kept to his normal schedule. The physician can always insert a small feeding of an ounce of two of protein milk, a lactic acid milk, or powdered skimmed milk, before the breast feeding, with good results, without taking the baby from the breast.

Diarrhea of *fermentative* nature, frequently called "summer complaint," simple diarrhea, gastro-enteritis, etc., may be due to a number of causes, is frequent in the experience of the doctor during the warm months, and the condition is an important factor in the first year of life. Overfeeding may play a part; intake of too much sugar or fats, or foods difficult to digest; keeping the baby too warm; food idiosyncrasies; and teething, may all be factors at the onset of this condition. The physician may not be able to diagnose the underlying cause immediately, but the simple and initial forms of treatment should be instigated and a proper follow-up and careful observation made to determine the further therapy needed.

Parenteral diarrhea is very common in the young patient; less common in in the child above three; but found throughout the childhood years. This is a "gastro-enteritis" or "ileo-colitis," brought on by infections elsewhere. Among the more common causes are: pyelitis, otitis media, appendicitis, pneumonia, tonsillitis, and the acute contagious diseases. The physician must make careful and frequent observations of the child, and search for the causes, since the diarrhea will rarely improve until the parenteral infection has been cleared up. Toxic symptoms appear rather rapidly in these conditions, and fever, dehydration, and acidosis are common.

Infectious diarrhea may be used to describe dysentery, typhoid, paratyphoid diseases, and those infections of the bowel caused by *B. coli*, the streptococci, *B. pyocyaneus*, etc. Enteral infections of this type generally lead to damage of the bowel wall and prolongation of the illness. Vomiting, fever, and mucus and blood in the stools, should cause definite suspicion of this group of diseases. Tuberculosis and parasitic infestations must be kept in mind with the endogenous group of infections. *Celiac disease* may be a gradually developing condition, easily overlooked. With more accurate methods of laboratory diagnosis, the physician is more than ever able to classify the enteral infections, and every practical means available should be used before this type diarrhea reaches the chronic stage.

Mechanical obstructions, calling for immediate surgery, must be constantly suspected in order to prevent overlooking these conditions. *Intussusception*, anomalies, ileus, and foreign bodies are most frequently accompanied by initial diarrhea, with bloody mucus, frequently followed by constipation, distention, and toxicosis. These conditions, unfortunately, most often occur in the infant, under a year or two of age, making the diagnosis more difficult.

Treatment

Starvation for from 24 to 36 hours may be rather safely applied at the onset of practically all the diarrheas, until the etiology can be more clearly determined. In some cases, mere diminution of the amount of food or diluting the feedings, will suffice. Reduction of the fat and sugar intake should be tried at once; and the use of an increased liquid intake, particularly water, weak tea, dextrin-maltose water, and the unsweetened carbonated drinks, is of value. Frequent and large doses of bismuth or pectin mixtures may clear up the condition, if instituted early. The recent widespread use of *powdered apple* is safe and effective. Sedation should be used in sufficient amounts to provide physical rest and keep the child in bed.

If vomiting is profuse, with the diarrhea, all foods and drugs by mouth should be stopped. Maintenance of body fluids is paramount. Intravenous infusions of dextrose, molar sodium lactate, and Ringer's solution are of great aid, particularly by the intravenous drip method. Acidosis, dehydration, and anhydremia must be carefully guarded against, since a fatal outcome is largely influenced by these conditions. Oral medication may be limited, due to vomiting.

Control of enteral and parenteral infections must be attempted as quickly and efficiently as one can. Removal of ear infections, treatment of pyelitis, and proper handling of upper respiratory infections must be accomplished even before treatment for the diarrhea is attempted.

After starvation, weakened milk mixtures may be given freely, to maintain nourishment. The *vitamin intake* must be watched as carefully as possible. As the stools tend to resume normal consistency, small, frequent feedings of protein foods may be safely given, keeping the patient hungry if necessary, to prevent recurrence of the diarrhea and

vomiting. Gradual resumption of an adequate diet and nutrition is the ultimate goal.

The *sulfonamide drugs* have offered definite aid, particularly in the field of enteral infections. Available literature tends to prove the efficiency of both *sulfathiazole* and *sulfaguanidine*, and even better results are obtained with some of the newer sulfa derivatives, experimentally.

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Laboratory Findings in Diarrheal Diseases

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ALTHOUGH the presence of a diarrhea is usually easily diagnosed by the increased frequency and lessened consistency of the stools, there are occasional instances when the aid of the laboratory may be needed, even for the solution of this seemingly simple problem.

The stools may be softer than normal but not sufficiently liquid to permit an indisputable diagnosis of diarrhea. Here is a test which helps to decide the question. The patient is given a capsule containing either 1 Gm. of powdered charcoal or of 0.3 Gm. of carmine; the time is noted and the patient instructed to bring in all stool specimens passed, in separate containers, noting for each the time at which it was passed. The time from the ingestion to the time of passage of the stool colored by the charcoal or dye, is the time of passage through the gastro-intestinal tract, and indicates diarrhea if it is under 24 hours. The normal interval is from 30 to 40 hours.

The problem presenting itself much more frequently is, not whether there is diarrhea, but what is its nature and etiology. In order to properly appreciate the abnormal findings, a few brief remarks are necessary on the physiology of the stool.

Fifty percent of the dry weight of the stool consists of bacteria (mostly dead); the remainder is desquamated epithelial cells, digestive secretions, and food remnants. Most of the food remnants are cellulose and other indigestable matter, small amounts of fat, starch, and muscle fibers. The composition, consistency, and appearance of the feces will be influenced by the rapidity of the passage through the intestinal tract, by abnormalities (deficiency or excess) of any of the secretions entering the intestines, and by variations in the bacterial flora. In diarrhea, shortening of the time of passage will decrease the digestion and absorption.

Factors responsible for diarrheas are chemical, mechanical, or nervous irritation of the intestinal mucosa, and inflammations (specific and non-specific) of the intestinal wall. Deficiency of any digestive secretion will be shown by a lack of the residues of this secretion and an increase in the substances normally digested or absorbed with the aid of it; for instance, deficiency in pancreatic juice increases the fat contents in the feces and leaves certain formed elements (nuclei) undigested.

Characteristics of Diarrheal Stools

Diarrheal stools are soft, mushy, or liquid. In some diarrheal diseases the appearance is characteristic: the rice-water discharges, without fecal matter, in cholera; the bulky, frothy stools of sprue; the green stools in diarrheas of childhood; the pale, greasy stools in tuberculous peritonitis and in disease of the pancreas; the bloody stools in diarrheas of patients with gastric or intestinal ulcers. It should be remembered that the idea that hemorrhages in the stomach or upper intestine cause tarry stools *does not hold in the presence of diarrhea*. Here the color may be red, even if the source of the blood is high up.

Deviations from the normal *odor* may be of help occasionally. In dyspepsias which are characterized by disturbance of the normal bacterial flora, the odor is sour (the chemical reaction strongly acid) in *fermentative dyspepsia* in which digestion of carbohydrates is deficient. The odor is putrid and the reaction strongly alkaline in *putrefactive dyspepsia*, which is due to indigested protein getting down to the lower intestines, where it is exposed to the action of putrefactive bacteria. The chemical reaction of the normal stool is neutral, slightly acid, or alkaline. In adults, a foul stench is suggestive of diffuse ulcerations in colitis or in malignant disease of the lower bowel.

Large amounts of *mucus* are indicative of *irritation* or *inflammation*. When the mucus is intimately mixed with the stool, the disease is probably in the small intestine. Mucus covering the surface points to the large bowel as the seat of trouble. Stools composed almost entirely of mucus suggest *dysentery* or *ileocolitis*. Shreds, ribbons, or complete casts of mucus are characteristic of so-called *mucous colitis*.

The presence of ulcerations may be

diagnosed by detection of occult blood with proper chemical tests, in the absence of gross evidences of blood. Sources of bleeding in the mouth (pyorrhea) must be excluded and the patient must be on a meat-free diet for at least three days, and preferably longer.

Microscopic study of stools is necessary for detection of abnormalities of composition, some of which are of diagnostic value. *Undigested connective tissue fibers* are found in diarrheas due to *chronic gastritis* and *achylia gastrica*. In diarrheas for which diseases of the pancreas are held responsible, the characteristic findings are large amounts of fat (steapsin deficiency), undigested starch (amylopsin deficiency), and preserved nuclei in meat remnants (nuclei are digested by pancreatic secretion, and not by gastric juice).

Pus is indicative of inflammatory and ulcerative conditions. Abundant mucus and scarcity of pus cells favor *amebic dysentery*. In *bacillary dysentery, pus cells are abundant*, together with large mononuclear phagocytic cells, which may ingest leucocytes and red cells and may be mistaken for histolytic amebae, by the inexperienced. It has been reported that, in bacillary dysentery, the red cells tend to form clumps.

A *bacteriologic* and *parasitologic* study permits, in some instances, the recognition of the true etiology, and is always essential. Limitations of space do not permit more than a few brief remarks.

The importance of sending of *fresh* specimens of stool to the laboratory is too well known to require emphasis. Failure to observe this rule may prevent the detection of a responsible bacterium or parasite. The detection of the true etiology of diarrheal diseases may require the examination of a blood culture (for instance in typhoid fever); of agglutinating antibodies in the blood (for instance, in typhoid fever and in bacillary dysentery); of blood-cell counts (leukopenia in typhoid fever); of blood smears (eosinophilia in amebic dysentery and occasionally in ulcerative colitis); and of the urine (diazo reaction and bacilluria in typhoid fever).

I am painfully aware that the above remarks are too sketchy to give more than a bird's-eye view of the complexity of the problems involved in the diagnosis of diarrheal disease, but I hope that they will convince the reader that much can be gained by close cooperation between the clinician and the clinical pathologist.

Mt. Sinai Hosp.

Supplementary Notes on Abnormal Respiration*

By LEROY H. SLOAN, M. D., F.A.C.P.,
Chicago, Ill.
Prof. of Med., Univ. of Ill. Coll. of Medicine

KUSSMAUL BREATHING is seen in diabetic acidosis, and is characteristically accelerated and quickened, *but deeper than normal accelerated hypernea.*

Under "Dyspnea," Levine cites, in order: Anemia, asthmatic bronchitis, bronchial factors, chronic emphysema, pulmonary embolism, infarction, functional, neurotic, nocturnal, obesity, paroxysmal.

In our daily work it is particularly important to emphasize the *nocturnal* dyspnea which we see with failure of the *left* ventricle, and the *daily* or night-and-day type that we see with *right* heart failure; and, of course, the *continuous* type when we are dealing with a heart which is ballooned out with a bilateral dilatation.

Functional disorders, such as we meet today, for example, in soldiers' hearts (the "neurocirculatory asthenia" and "effort syndrome" of World War No. 1) are important.†

One frequently sees severe coronary lesions without shortness of breath; also one may see, as Levine points out, hyperthyroidism without dyspnea. Dyspnea may be present solely as a result of anemia.

One should contrast the breathlessness due to effort and that occurring with no effort, seen with the patient in bed. The first as due to *coronary disease*, myocardial degeneration, myofibrosis, compression of the cardiac chamber by a small amount of fluid or tumor, or by fluid in the pleural cavity; and the second is due, at times, to the above, but more often to a chronic, active, day-and-night lesion of serious import.

Attention should be given to the *sighing respiration* which we see in the neurotic woman, and also in the neurotic man who sits in the office and lets out a long, ill-defined, but apparently effortful sigh, heard across the room. The *vital capacity is normal*, in these neurotic, non-organic types.

Deformity of the chest cavity, such as that caused by tuberculosis of the spine (socalled *trichter brust*) may be a cause of abnormal respiration.

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*See CLIN MED., July, 1942, page 201.
†See CLIN. MED., June, 1942, page 168.

CLINICAL NOTES and ABSTRACTS

Microfilm copies of any of the published papers here abstracted, up to 25 pages, may be obtained for 25 cents from Microfilm Service, Army Medical Library, Washington, D.C.

Brucellosis*

DURING the 18 months, prior to 1930, 90 cases of brucellosis were recognized in and around Dayton, Ohio; and in the four years prior to the passage of a universal milk pasteurization ordinance by that city, 196 cases were encountered. During 1929, this disease was reported from every state in the Union; and 3,358 cases were reported to various health authorities in 1940. Undoubtedly the number of actual cases is much larger than that reported.

In cities, nearly all cases of brucellosis are due to *Brucella abortus*, transmitted by raw milk from infected cattle, and universal pasteurization will eliminate these. Since the passage of such an ordinance in Dayton, no case of the disease has been observed among those who used pasteurized milk. In farming communities, some cases are acquired through the skin, by contact with infected cattle or hogs, or their discharges. There is no evidence of man-to-man transmission. Infection with *B. suis* is relatively rare in the United States, and with *B. Melitensis*, still rarer.

Diagnosis and Symptoms

The diseases with which brucellosis is most commonly confused, because of the symptoms, are typhoid fever, malaria, tuberculosis, and influenza. Less often it is mistaken for acute rheumatic fever, subacute bacterial endocarditis, bronchitis, appendicitis, cholecystitis, and tularemia.

There are two distinct and different forms of the disease: acute and chronic.

In *acute* cases, the incubation period may be from five days to one month. The *onset* is generally *gradual*, though it may begin with a sharp chill and a fever up to 105° F. (40.6° C.). The *early symptoms* are tiredness, weakness, anorexia, constipation, headache, backache, light chills or chilliness (25 percent of patients do not have this symptom; about 30 percent have true rigors), and nocturnal sweating. The subjective sense of fever is much less than that shown by the thermometer, and the patient generally feels fairly well in the morning, but grows steadily worse toward evening, as the fever rises. Joint and muscle pains occur in about half of the cases. Marked nocturnal restlessness and insomnia are common. Localization of the infection in the joints, bones, meninges, eyes, heart, respiratory tract, skin, and other organs may occur, but is rather rare. The patient may lose from 10 to 50 pounds of weight.

The technical *diagnostic procedures*,† applicable to both acute and chronic cases, include (1) direct isolation and culture of the specific organism from the blood, spinal fluid, secretions, excretions, or excised tissues; (2) indirect culture after animal inoculation; (3) the agglutination test; (4) the intradermal test; and (5) the opsonocytophagic test. Of these, Nos. 1 and 2 are the only ones that are completely reliable. The agglutination test is fairly accurate in *acute* cases, *if made before the skin test*. The others may be considered as helpful *evidence*, but not *proof*.

The blood picture is decidedly characteristic: absolute and relative *lymphocytosis;* mild *macrocytic* ("pernicious" type) *anemia;* and a *moderate sedimentation rate*, except when there are local complications.

Chronic Brucellosis

No disease is more protean in its manifestations (more than 150 symp-

*Ann. Int. Med., Sept., 1941. (This is an exceptionally complete and up-to-date article, and it will be worth while to look it up or write to the author (send stamps) for a reprint.—Ed.)

†Complete details of all these tests are given in the original paper.—Ed.

toms have been listed) than chronic brucellosis, which is preceded by an acute attack in less than 10 percent of the cases. All or most of the symptoms and laboratory signs of the acute form may be absent, the patient being only partially incapacitated and complaining merely of weakness and exhaustion, with or without mild fever. Such cases present tremendous diagnostic problems, and even conscientious physicians have sometimes labeled them "neurasthenia."

The death rate of brucellosis (direct and as a result of complications) is low (about 2 percent), but the *morbidity rate* is high. Acute cases may recover in two or three weeks, but generally drag on for a month or two, or even longer, with partial disablement and continuing fever. Chronic cases, if untreated, may last for *years*.

Prophylaxis and Treatment

Pasteurization will prevent the transmission of milk-borne infections. A *combined vaccine* against brucellosis and typhoid seems to be a safe and effective prophylactic.

Specific therapy (about which it is wise not to become too enthusiastic) may be carried out, in acute and *early* chronic cases, with *Foshay's anti-Brucella serum*. "*Brucella melitensis* (varieties *abortus* and *suis*) *vaccine*" is included in "New and Non-official Remedies," is available commercially, and seems to be fairly effective; and Foshay and O'Neil have prepared a partially oxidized, detoxified vaccine, of which there have been some good reports. Huddleson's *Brucellin* seems promising. The vaccines are reported to cure or help from 60 to 85 per cent of patients.

Non-Specific protein therapy, using sterile skimmed milk, typhoid vaccine, and other preparations, has been helpful in some cases; and so has *artificial fever therapy*, where the equipment and trained personnel to give it are available.

Chemotherapy, with the sulfonamides and other chemical substances has been disappointing, so far.

WALTER M. SIMPSON, M.S., M.D., F.A.C.P.
Dayton, Ohio

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Penetrating Cold

The homely ice bag may be a more potent therapeutic resource than we have imagined, according to Drs. William Bierman and Mae Friedlander, of New York, as reported in *Science News Letter* for Sept. 7, 1940. A patient from whom a brain tumor had been removed gave them a chance something like that which made Dr. William Beaumont famous. They stuck a thermometer into the frontal lobes, 2 inches below the surface of the forehead, upon which latter they laid ice bags. The temperature of the brain decreased 1.5° F. It has also been determined that ice bags on the calf of the leg will reduce the deep muscle temperature as much as 26.4° F.

◆

Nervous Symptoms from Sulfonamides

All members of the sulfonamide group have a toxic effect on the nervous system. Sulfanilamide is the least toxic; the newer derivatives (sulfadiazine, sulfathiazole, sulfamethylthiazole) are the most toxic. The intermittent use of a single sulfonamide or the successive administration of different sulfonamides seems to predispose to the development of toxic nervous system symptoms. The drugs are more neurotoxic if disease of the nervous system is present.

These abnormal conditions have been reported as due to the use of sulfonamides: aphasia, stammering, peripheral neuritis, blindness, convulsions, transitory myopia, meningeal signs, agraphia, dysmorphopsia, toxic psychosis, myelitis, and encephalomyelitis.—S. C. LITTLE, M. D., in *J.A.M.A.*, June 6, 1942.

◆

Relief of Hay Fever

When confronted by a patient in the full bloom of hay fever, it is too late to think of zinc ionization or pollen extract injections. What the patient is interested in is *immediate relief*.

The main thing is to keep the nostrils open and clean. This is easily accomplished by the use of Suprarenin (Winthrop), which has the same properties as Adrenalin, except the secondary hyperemia.

The following prescription should be dispensed to the patient:

℞

Tab. Suprarenin, 1/65 Grain (1 mg.)
No. 1
Fresh-boiled distilled water 15 cc.

M. et Sig:—Spray nostrils every two hours.

Request the patient to return the next day and *bring the bottle*. Examine the nose and note the degree of ischemia and whether the patient is breathing easily and the nose is draining freely. If not, add another tablet and water to make 15 cc. In a few days one can determine the minimum strength of solution that will keep the patient com-

fortable. Have him call every other day.

The nose should be kept clean by irrigation to remove the pollens, and one of the best and easiest methods for the patient is with Nichols Nasal Syphon, using one physiologic salt solution tablet (or a level teaspoonful of salt) in a pint of warm water night and morning, followed by a few drops of cod-liver oil in each nostril. The oil is soothing to the nasal mucous membrane. Also instill a drop of Estivin in the eyes three times a day. This will control the conjunctivitis and keep the nasolacrimal ducts open. In some cases, where the lids become highly inflamed, a few drops of cod-liver oil, in the eyes, is specific.

Internally, the patient should take large doses of cod-liver oil and dicalcium-phosphate. I know that cod-liver oil is very beneficial in hay fever, but I don't know why. My guess is that its active principle is eliminated through the nasal mucous membrane.

The sneezing and hay-fever asthma may be controlled by taking two tablets of Hay-Fevin three times a day.

F. A. WIER, M. D.

Racine, Wis.

For Better Sleep

Go to bed, *alone*, early enough, after an *easily digested* lunch, on a bed at least 39 inches wide with coiled springs and a light inner-spring mattress, the sheets tucked in thoroughly at the foot, and sufficient light-weight covers to be warm; in a *dark, quiet*, room; with the firm *expectation* of going to sleep and with a clear conscience to calm the emotions; and then *relax, consciously*, and completely. Sleep until you are "slept out," so that you will awake, spontaneously and refreshed, to a zestful day.

—DONALD S. LAIRD, Sc.D., in "How to Sleep and Rest Better." New York: Funk and Wagnalls Co., 1937.

Muscle Spasms in Poliomyelitis

One of the most important symptoms in poliomyelitis is spasms of various muscles, and the principal locations of demonstrable muscle spasm, in approximate order of frequency, are: (1) Hamstrings; (2) back and neck; (3) posterior calf muscles; (4) pectorals; (5) muscles of respiration; (6) quadriceps; and (7) biceps of the arm. Spasm is also frequently found in the forearm and anterior leg muscles.

Spasm may be diagnosed by observation alone, in many instances, through the presence of abnormal skin creases, prominence of muscle bellies or tendons, and characteristic positions assumed by the part. Often the physician is able to locate the spasm by observation and palpation, without necessarily encouraging any painful motions. The diagnosis becomes obvious when the muscle in spasm is passively stretched. Care should be taken not to aggravate spasm by too-frequent examination to demonstrate spasm during the acute stage. The diagnosis should be made by observation alone if possible.—DRS. W. H. COLE, J. F. POHL, and M. E. KNAPP, in "The Kenny Method of Treatment for Infantile Paralysis," 1942.

Eye Prescriptions

Vernal Conjunctivitis

℞

Quinine hydrochlor. 0.10
Vaselin album 10.00

Sig.: Place a small portion in the eye twice daily.

Catarrhal Conjunctivitis

℞

Zinc sulf. 0.06
Morph. sulf. 0.06
Aqua dest. 30.00

Sig.: A few drops in each eye two or three times daily, or as needed.

Simple Corneal Ulcer

℞

Daturin sulf. 0.03
Ac. boric 0.33
Phenol 0.06
Aqua dest. 30.00

Sig.: A drop or two in each eye once a day.

Keratitis Marginalis

℞

Dionin 0.20
Holocain 0.03
Atropine sulf. 0.12
Aqua dest. 15.00

Sig.: A drop or two in the affected eye three times daily.

Chronic Folliculosis

℞

Zinc sulf. 0.06
Sod. bibor. 0.20
Glycerin 10.00
Aq. rosae q.s. ad 30.00

Sig.: A few drops in each eye three times daily.—*E. E. N. & T. M.*, July, 1941.

Dangerous Insulin Reactions

Unusual symptoms may appear when a patient is taking insulin, especially protamine insulin, in such doses that his blood sugar drops below normal (80 mg. per 100 cc.).

Nervousness, irritability, disorienta-

tion ("doesn't know where he is"), mental confusion ("seems in a daze"), and aphasia may appear. He may seem uninterested in his home, business, or family. He may drive home through traffic without remembering it. One patient, whose blood sugar dropped to 29, tried to attack his son with a razor.

The patient's family should be told to watch for tremor, ataxia (incoordination), and later, for twitchings and rigor, followed by weakness or paralysis in one extremity or group of muscles. Unusual excitability, anxiety, or depression should be the signal to give orange juice or bread and milk. A tendency to loiter and think and move slowly may not be recognized by the patient.

During the reaction, the patients may be unable to make the simplest decision, or to take food or sugar, which they should carry with them. They may fight with their wife or husband, condemn their friends, or have hallucinations or hysterical attacks.

Rule. Never give more than 40 units of protamine insulin daily. Do not attempt to keep the urine entirely sugar-free. The patient or his family should see that food is taken whenever unexplained symptoms occur.—A. H. BEARD, M. D., in *Minn. Med.*, June, 1942.

MEDICO-MILITARY NOTES

Physicians for Military Service

The volunteering of physicians for service with the armed forces is lagging seriously, especially in New York, Illinois, California, Pennsylvania, Massachusetts, New Jersey, Michigan and Ohio. More than 20,000 additional physicians will be needed by the end of this year, and if they do not volunteer, some method must be found to draft them.

The needs of the communities from which these doctors are taken cannot be met merely by increasing the working hours of those who are left. Preventable illness and unreasonable demands on the physician's time must be reduced to a minimum. The general public must be educated in regard to those conditions, and their cooperation enlisted.—PAUL V. MCNUTT, in J.A.M.A., June 27, 1942, page 715.

✦

Flight Surgeons' Assistants

The duties of a flight surgeon are various and complex, and as some of them can be performed satisfactorily by trained lay assistants, six courses of training for such assistants are now being given annually, at the School of Aviation Medicine, Randolph Field, Texas, the Commandant of which is Col. Eugen G. Reinartz, M. C., U.S.A. Those who are interested had better write to Col. Reinartz for full particulars.

Segregation of Negro Blood in Blood Banks

Opposition to the segregation of Negro blood plasma, by the Red Cross authorities, is developing, on the grounds that there is no biologic difference in the bloods of different human races; that the possibility of transmitting infection is ruled out by the processing of the plasma; and that people are regularly using secretions and extracts made from lower animals.

✦

Instruction in Medical Aspects of Chemical Warfare

Arrangements are now being made to instruct thousands of New York physicians how to diagnose and treat cases of gas poisoning—though poison gases have not yet been used in this war. This instruction will be given by the New York medical schools, and will then be passed to the local emergency medical service squads.

✦

June Graduates Enter War Service

A survey made by the Investors Syndicate indicates that more than 50 percent of the 1942 graduates from 156 leading educational institutions will enter the Army, Navy or Marine Corps after commencement. Another group of 166 schools will send 25 percent or less of their graduates into war service.

DIAGNOSTIC POINTERS

Precordial Pain

• Precordial pain is frequently *not* of cardiac origin. The most characteristic feature of true angina is not its *location*, but the fact that it is precipitated by exertion or excitement. If these two factors are not operative, precordial pain probably does not arise from the heart.—RICHARD B. CAPPS, M.D., in *Bul. Chicago Heart Assn.*, July-Dec., 1941.

Nerve Resection in Intractable Asthma

• One-third of patients with severe, intractable bronchial asthma are strikingly benefited after bilateral resection of the pulmonary plexus. The duration of the disease and the age of the patient have no relation to the outcome.—W. M. RIENHOFF, M.D., in *Bull. Johns Hopkins Hosp.*, Apr., 1942.

Hypothyroidism in Children

• In children, where basal metabolic readings are difficult and misleading, a serum-cholesterol level above 325 mg. percent, *in the absence of diabetes, nephrosis or liver disease*, is highly suggestive of hypothyroidism. Editorial in *Lancet* (London), Aug. 2, 1941.

Angina Pectoris

• Any pain in the neck, arm, chest, or even the upper abdomen, which comes on with exertion and is relieved within a few minutes by rest, is probably caused by angina pectoris. No objective abnormalities may be found on physical examination, and even little or no change in the electrocardiogram.—T. R. HARRISON, M.D., in *South Med. & Surg.*, Oct., 1941.

Backache Due to Coitus Interuptus

• A blue, hot, non-pregnant cervix is a presumptive sign that coitus interuptus is being carried on. The resulting pelvic congestion is a frequent cause of backache.—J. H. SURE, M.D., in *Med. World* (Lond.), Feb. 27, 1942.

Blood Pressure Variations

• The systolic and diastolic blood pressure readings of a person with large arms are likely to be too high, and those of persons with thin arms too low. The error in either direction may exceed 30 mm. of mercury. These studies must be borne in mind when one is considering the diagnosis and prognosis of a patient with apparent hypertension or hypotension. — CHAS. RAGLAN, M.D., in *Bull. Johns Hopkins Hosp.*, Dec., 1941.

Obscure Throat Complaints

• Such indefinite throat symptoms as fullness, dysphagia, and pain radiating to the mastoid bone, which increase after tonsillectomy, are frequently due to an elongated styloid process of the temporal bone. *Diagnosis:* Palpate the elongated bony process in the tonsillar fossa; have a roentgram made.—E.E.N.T.M., Apr., 1942.

Orthostatic Albuminuria

• Many cases of orthostatic albuminuria are apparently due to nasal sinusitis(or other focal infection) of a subacute or chronic type. In some cases, a true kidney infection develops later.—W. R. SHANNON, M.D., in *Minn. Med.*, June, 1942.

"Overdue" Baby

• The pregnant uterus always empties itself. There is no method by which we may be sure exactly when delivery should take place, and a really postmature baby is a rare occurrence. For these reasons, labor should *never* be induced. Every baby has a right to full intrauterine maturity, in order that it may have a greater chance to survive. —C. E. GALLOWAY, M.D., in *Med. World*, Nov., 1940.

Allergic Muscle Pains

• These symptoms may be due to allergy: (1) Leg pains, which may awaken the patient at night; (2) arm pains; and (3) muscle soreness and tenderness. Frequently there is a family history of allergic diseases (hives, hay fever, asthma, migraine).—R. M. BALYEAT, M.D., in *Proc. Bal. Hay Fever Clinic*, May, 1942.

THUMBNAIL THERAPEUTICS

Oral and Hypodermic Treatment of Hay Fever

• The relative effects obtained by the oral and hypodermic treatment of ragweed-caused hay fever are summarized, in percentages, thus:

Administration	Excell.	Good	Fair	Failure
Oral				
Preseasonal	4.8	16.1	40.3	33.9
During season	0	0	70.0	20.0
Hypodermic	35.1	29.7	24.3	10.8

—E. N. ILIFF, M.D., in *Bull. Johns Hopkins Hosp.*, Apr., 1942.

Prevention of Shock After Injury

• In the treatment of an injured extremity, shock may be prevented by infiltrating procaine solution around the arm or leg, proximal to the area of trauma. Spinal anesthesia is the agent to use if a severe injury to the leg occurs. — A. VISHNEVSKY, M.D., in *Sovet. Med.*, Dec., 1941.

Sulfaguanidine in Brucellosis

• The administration of 9 grams of sulfaguanidine, daily for six days, is effective in treating brucellosis (undulant fever).—E. S. SARVIS, M.D., in *Northwest Med.*, June, 1942.

Ophthalmia Neonatorum

• In treating ophthalmia neonatorum, one grain of sulfanilamide should be given per pound of body weight each day, together with an equal amount of sodium bicarbonate. Discharge should be washed from the eye every hour, day and night, with boric acid solution. Such treatment usually cures the infection in 3 days or less. —F. V. GAMMAGE, M.D., in *E.E.N.T.M.*, Apr., 1942.

Cardiac Neuroses

• Patients with cardiac neuroses should be encouraged to take as much exercise as is safe in their particular case, and symptomatic remedies should be used as indicated. — RICHARD B. CAPPS, M.D., in *Bul. Chicago Heart Assn.*, July-Dec., 1941.

Potassium Chloride in Hay Fever

• Children are given doses of 5 grains (325 mg.) of potassium chloride, three times daily, after meals, dissolved in one-half glass of cool water or fruit juice and sipped slowly. Too-rapid drinking often causes nausea, abdominal distress, and even vomiting. In children over 8 years, the dose may be increased to 10 gr. (650 mg.) three times daily. Adults may require 15 gr. (1.0 Gm.) doses. Very little salt (sodium chloride) should be used in the diet during the time that potassium chloride is being taken.—A. V. STOESSER, M.D., in *Journal-Lancet*, May, 1942.

Histaminase in Urticaria

• The oral administration of histaminase (Torantil) is effective in relieving three-fourths of the cases of chronic urticaria. Atopic dermatitis is relieved in one-half of the cases.—C. W. LAYMON, M.D., in *Minn. Med.*, June, 1942.

Colic and Melena in Infancy

• Infants with abdominal colic and melena may be sensitive to cows' milk. The substitution of goats' milk or soy bean milk feedings will relieve these intestinal symptoms in such cases.—M. I. RUBIN, M.D., in *Penn. Med. J.*, Apr., 1942.

Coramine

• Coramine is the old person's friend. It stimulates *internal* or tissue respiration and dilates the coronary vessels, in doses of from 20 to 30 drops a day. It is not a succedaneum for digitalis or theophylline, but it *will* "pinch hit" for niacin.—FRANK WRIGHT, M.D., F.A.C.P., Chicago, Ill.

Estrogen in Dysmenorrhea

• Dysmenorrhea, when associated with a poorly developed uterus, is relieved by the injection of estrogenic hormone (Progynon, Theelin), in doses of 10,000 international units every third day, for from 6 to 10 injections, beginning no later than the sixth day of the cycle. Uterine development is promoted.—EMIL NOVAK, M.D., in *South. Med. & Surg.*, Apr., 1940.

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.

Resolve to edge in a little reading every day, if it is but a single sentence. If you gain fifteen minutes a day, it will make itself felt at the end of the year.—HORACE MANN.

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MATERIA MEDICA, PHARMACOLOGY

Davison

A SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY, AND PHARMACOLOGY, for Students and Practitioners of Medicine. *By* FORREST RAMON DAVISON, B.A., M.Sc., Ph.D., M.B., *Medical Department, The Upjohn Company, Kalamazoo, Michigan. Formerly Assistant Professor of Pharmacology, School of Medicine, University of Arkansas, Little Rock. Second Edition. 45 illustrations; 4 in color. St. Louis: The C. V. Mosby Company. 1942. Price, $5.75.*

This clearly written, understandable book has been revised and reprinted. The text has been written for the practitioner, not the research worker. Any drug desired can be located and its principal actions, dosage, and other important facts read over in a moment.

On the other hand, if a drug is desired to accomplish a certain purpose, the chapter headings are laid out so that all medicaments working to a certain end or upon a certain body system are grouped together. Salient chapters discuss drugs which act on the central nervous system, and subgroups are classified into stimulants and depressants (hypnotics, sedatives, anesthetics, analgesics); drugs which act on the peripheral nervous system (sympathetic and parasympathetic); drugs applied to the skin and mucous membranes (internally or externally); and biologic agents. Sulfonamide drugs are given a full chapter. Clinical pointers are found throughout the text.

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ANO-RECTAL DISEASES

Hirschman

SYNOPSIS OF ANO-RECTAL DISEASES. *By* LOUIS J. HIRSCHMAN, M.D., F.A.C.S., *Professor of Proctology, Wayne University; Extra-Mural Lecturer on Proctology, Post Graduate School, University of Michigan; etc. Second Edition; 182 text illustrations; 12 color plates. 1942. Price, $4.50.*

This is a usable, brief proctologic text, with many illustrations, both diagrammatic and roentgenographic. Complete instructions as to surgical procedures, diagnostic steps, pre- and postoperative care are given.

Unusually well done are two full pages of colored illustrations showing various pathologic conditions in the rectum and anus, as viewed through the anoscope or sigmoidoscope (one of the few volumes on rectal diseases which present such pictures). It is much more to the point to show life-like pictures of carcinoma of the rectum than to spend pages in telling the general practitioner that he shouldn't miss the diagnosis.

This is one of the Mosby synopsis series, which are bound in attractive, substantial covers and very well printed.

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FRACTURES, DISLOCATIONS, SPRAINS

Key and Conwell

THE MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS. *By* JOHN ALBERT KEY, B.S., M.D., *Clinical Professor of Orthopedic Surgery, Washington University School of Medicine; etc.; and* H. EARLE CONWELL, M.D., F.A.C.S., *Associate Surgical Director of the Crippled Children's Hospital, Attending Orthopedic Surgeon to St. Vincent's Hospital, etc., Birmingham, Alabama. Third Edition. St. Louis: The C. V. Mosby Company. 1942. Price, $12.50.*

For the surgeon or physician interested in practical, detailed instructions on the care of bone or joint injuries, this book cannot be too highly recommended. Helpful diagnostic points are given and (just as important) those time-worn medical opinions which have cluttered up the literature are shown to be false or of no help under present-day conditions.

Photographs of patients following injury, during reduction, showing methods of applying casts of various types, and showing end results are of real teaching value. Before-and-after roentgrams are given, with notes on the type of treatment used and the results obtained. The tone of the book is frank, the explanations clear. Complete information is given as to the little points that mean so much to the patient's comfort in a cast or apparatus.

The entire field of bone and joint injuries, including brain trauma, is covered well.

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PEDIATRICS

Porter and Carter

THE MANAGEMENT OF THE SICK INFANT AND CHILD. *By* LANGLEY PORTER, B.S., M.D., M.R.C.S., *(Eng.)*, L.R.C.P. *(Lond.)*, *Dean Emeritus, University of California Medical School and Professor of Medicine, etc., and* WILLIAM E. CARTER, M.D., *Formerly Chief Children's Clinic, University of California Hospital, etc. Sixth Revised Edition. St. Louis: The C. V. Mosby Company, 1942. Price, $11.50.*

This text has again been revised. First issued twenty years ago, it has won a firm place for itself. The first 244 pages are devoted to *symptoms*—vomiting, diarrhea, constipation, nutrition, hemorrhage, pain and tenderness, convulsions, fever, cough, etc. As the physician is called because of the presence of one or more of these symptoms, he should know what causes them and what can be done to relieve or cure them—and the etiologic disease.

The second part dicusses diseases of the body systems, as in the conventional text. Behavior (including behavior patterns), personality, imagination, training of the nervous system, sleep, disorders in personality, conflict, training and feeding difficulties, are discussed in a separate chapter.

One hundred and fifty pages are devoted to *methods*—workable technics of giving intravenous solutions, blood transfusions, medications to refractory infants, feeding with gastric tube, and so on. Formulas, recipes, drugs, and poisonings are discussed in the last 120 pages.

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